

# Book VoIP Switch Operation



## **Introduction**

The Aarenet VoIP System operating and system administration personnel find here links to detailed information about:

- ◇ [Instructions for 3<sup>rd</sup> party CRM programmers for using the DAML API](#)

# DAML API for 3<sup>rd</sup> Party CRM

## Overview of the DataAccessCenter

The DataAccessCenter offers a HTTP/HTTPS based interface which allows 3rd-party applications to access the operational data of the Aarenet VoIP Switch. Therefore it is predestined for the configuration of the Aarenet VoIP Switch via a CRM system of the provider.

The DataAccessCenter offers with the DAML interface (Data Access Markup Language DAML) an API and protocol to configure operational data of the Aarenet VoIP Switch.

The following features distinguish the DataAccessCenter:

- ◇ The DAML interface allows the configuration of all customer parameters of the VoIP Switch.
- ◇ The DAML documents are exchanged with the HTTP/HTTPS protocol.
- ◇ The access is protected by a HTTP-Authentication.
- ◇ The interface supports XML-based data (version XML 1.0).
- ◇ The XLS transformation XSLT is supported for checks and formalizing.
- ◇ For the immediate use DAML-Formats are prepared for managing of account, phone numbers and other often used features.
- ◇ Customized DAML-Formats can be created when required.

DAML allows to configure the following operative parameters:

- ◇ "Account":  
For the creation and treatment of customers account
- ◇ "Address"  
For the creation and treatment of public and internal phone numbers in customer accounts and vPBX
- ◇ etc.

DAML allows queries of the configured parameters or other data:

- ◇ Account:  
Query of all account names
- ◇ Connection list:  
Query of the CDR of the last N connections of a phone number
- ◇ etc.

The DAML protocol bases on XML formatted documents (Introduction to XML):

- ◇ The basic rules of the XML standards are valid, version XML 1.0
- ◇ The order of the XML elements is free
- ◇ If XML elements are not provided during the creation of an instance, the default value of the Aarenet VoIP Switch is considered.

The DAML protocol can be customized with XSLT script. Possibilities are:


- ◇ Make the interface stable
- ◇ Define defaults
- ◇ Do some rough checks

With XSLT a XML document can be converted into another XML document. With the DAML interface it is possible to treat incoming XML documents, e.g. from a CRM application, with defined XSLT commands, before they are processed as DAM-documents. Vice versa outgoing XML documents can be reworked with defined XSLT commands and the result sent to the CRM application.

**Note** XSLT conversions must be developed and checked in corporation with the Aarenet engineering.

# How To Start with the DataAccessCenter

## Get in Touch with DAML

1. Get an DataAccessCenter account on:
  - Test Aarenet VoIP Switch
  - Pre-productive Aarenet VoIP Switch
2. Get IP access to the DataAccessCenter of this Aarenet VoIP Switch
3. Download the executable DAML Test Scripts:  
"Download DAML Test Scripts for a Residential User" 
4. Play around with the DAML Test Scripts for getting a feeling how it works
5. Do configuration in the ConfigCenter and read it out with DAML

## CRM Implementation

1. Implement the DataAccessCenter access and HTTP-Digest Authentication
2. For a starter implement HTTP-Get for a query
  - Basic read
  - Queries for, e.g.:
    - Ruleset
3. Implement the basic HTTP-Post data exchange for "write", "read", "delete"
4. Implement the "Account Treating" :
  - Basic create, read, delete
  - Parameter add, modify, delete for:
    - account
    - tenant
    - info
    - SIP credentials
    - etc.
5. Implement the "Address Treating" :
  - Basic create, read, delete
  - Parameter add, modify, delete for:
    - number
    - etc.
6. Implement the basic HTTP-Get data exchange for data queries :
  - Queries for:
    - Ruleset
    - etc.

## Best Practices with DAML Parameters

### Not Documented DAML Parameter

The DAML interface development evolves continuously. This documentation may lag behind the development of features and parameters

If upon a DAML read out such a DAML parameter is discovered and its naming points to a feature of interest then:

1. Login into the ConfigCenter
2. Search for a matching parameter name and study its possible configurations
3. Modify this possibly matching parameter
4. Make a new read out via DAML and compare it with the first read out. See if it matches your expectations.

If this process is not successful then contact the "VoIP Switch Supplier Support"

## Usage of Diverse DAML Parameter

- ◇ Use for the "Account Name" the CRM "Customer ID"
- ◇ Write in the "Account Info" information that a supporter helps to find a customer, without consulting the CRM for its ID

## Provisioning the DataAccessCenter for CRM Application Access

To grant an external CRM application access to the operational data via DataAccessCenter the following configuration at DataAccessCenter component level must be set up:

- 1. HTTP / HTTPS- Authorization-Credentials:**  
Defines the username and password the CRM application has to use for accessing the DataAccessCenter
- 2. Group-based Authorization:**  
Defines to which groups the CRM application has access.
- 3. Authorization for the use of to DAML-Documents and DAML-Queries:**  
Defines which DAML-Documents and DAML-Queries the CRM application is allowed to use. It is possible to specify the rights to "create", "read", "write", "delete".
- 4. XLTS files to be used for interpretation and formatting:**  
Defines, whether the configuration data must be pre and/or reworked by means of XLST conversions.

### Note

The configuration of the DataAccessCenter component has to be accomplished in close collaboration between the provider and the Aarenet project manager.

## Access via IP Network to the DataAccessCenter

For the DataAccessCenter the URL must have the following form:

### DAML Access:

```
https://</nowiki><IP_ADDRESS>:8447/dataaccesscenter
```

## DAML-Document Exchange via HTTP/HTTPS

### HTTP DIGEST Authentication

Prior the transfer of DAML-documents a CRM application has to apply the HTTP-Digest authentication in order to get access to the DataAccessCenter interface.

## HTTP POST Data Exchange

The CRM application must transmit its instructions with a HTTP-POST-Request toward the DataAccessCenter. By the use of the directive POST big data volumes can be transmitted in the HTTP body. Moreover, they are not visible within the URL.

The CRM must transfer with HTTP POST a DAML-document with the following directives:

**write:**

◇ The given data will be written. This directive creates or modifies instances.

**read:**

◇ The given data will be read and delivered.

**delete:**

◇ The given data will be deleted.

### DAML-Document Example:

```
<daml command="read">
    . . .
</daml>
```

## HTTP GET Data Exchange

DAMI Queries permit the queries of data which cannot be determined with usual DAML-Directives, e.g. connections list.

DAML-Queries are executed with HTTP GET Requests.

For the DataAccessCenter the URL must have the following form:

### DAML-Query Example:

```
https://</nowiki><IP_ADDRESS>:8447/dataaccesscenter/daml?query=DAML_QUERY_NAME
```

## HTTP RESPONSE (Execution and Error Codes)

After the data were successfully transmitted and treated, the response code "200 OK" is returned.

### Note

"200 OK" means that the request could be treated by the DataAccessCenter but **not** that the outcome is correct.

For example:

- ◇ Unknown XML fields are ignored and not reported with an error code
- ◇ A read request for an account with a wrong written account name will return a "200 OK" with an empty response

- ◇ A write request to an account with a wrong written account name will return a "200 OK" but the expected account was not modified but a new account with the wrong written name was created with just the modified parameter configuration in it.
- ◇ A query without correct query directive will return a "200 OK" with an empty response.

In the case of an error a code "4xx <ERROR\_DESCRIPTION>" or "5xx <ERROR\_DESCRIPTION>" is returned, e.g., "500 Internal Server Error".

If the cause of the problem is not deductive from the error message, the error situation can be examined from the information in the log file of the component DataAccessCenter.

## DAML-Document "Account" for Treating Customer Accounts

This DAML-document allows the treatment of accounts, its features and parameters:

- ◇ Create an account
- ◇ Delete an account
- ◇ Read an account
- ◇ Modify parameters or features of an existing account
- ◇ Add parameters or features to an existing account
- ◇ Delete parameters or features of an existing account

The SIP addresses (phone numbers) which are associated with the account are treated with the DAML-Document for Treating "Address".

## DAML XML-Container for "Account"

All XML fields are listed in the account container:

- ◇ The XML field <account> defines the XLS account container
- ◇ Mandatory is the XML field <accountName> which identifies the account unambiguously.
- ◇ The order of the XML fields is arbitrary

### Account-Container for "Account":

```

<account>
  < accountName>ACC_NAME</accountName>
  .
  .
  <featureN>
    <parameterN>PARAMETER_N</parameterN>
    .
    .
  </featureN>
  .
  .
  <parameterA>PARAMETER_A</parameterA>
  .
  .
</account>

```

# DAML-Document for Create, Delete, Read and Write an "Account"

## Create an "Account"

By creating an account all its features and parameters may be configured too.

### DAML-Document:

```
<daml command="write">
  <account>
    <accountName>ACC_NAME</accountName>
    .
    .
    .
    <featureN>
      <parameterN>PARAMETER_N</parameterN>
    </featureN>
    .
    .
    .
    <parameterA>PARAMETER_A</parameterA>
  </account>
</daml>
```

### Examples see:

- ◇ Create a "Residential Account" with 1 Public Number
- ◇ Create a "SIP Trunk" Account with 100 Public Numbers for ISDN PBX behind SIP CPE
- ◇ Create a vPBX Account with 5 Public Numbers

## Delete an "Account"

By deleting an account all its:

- ◇ Feature and parameter configurations will be deleted too
- ◇ Associated addresses and their configurations will be deleted too

### DAML-Document Example:

```
<daml command="delete">
  <account>
    <accountName>an-acc-0021</accountName>
  </account>
</daml>
```

## Read an "Account"

By reading an account all its:

- ◇ Feature and parameter configurations will be read

### DAML-Document Example:

```
<daml command="read">
```

```

    <account>
      <accountName>an-acc-0021</accountName>
    </account>
  </daml>

```

## Modify, Add or Delete an Account's Parameter or Feature

By writing to an existing account its parameters can be:

- ◇ Modified
- ◇ Added
- ◇ Deleted

### Warning

Make sure that you write the account name and/or XML names correctly. Else the result may be unpredictable even when the response is 200 OK!

For details see chapter "HTTP RESPONSE"

### Modifying:

By re-writing an account's parameter its configuration will be changed:

- ◇ The feature and/or parameter configurations will be modified
- ◇ Special modifying procedures are required for:
  - "Ruleset"
  - "TopStop"

### Adding:

By adding a parameter its configuration will be created:

- ◇ The feature and/or parameter configurations will be created

### Deleting:

By writing an "empty" value to a parameter:

- ◇ The feature and/or parameter will be deleted
- ◇ Special deleting procedures are required for:
  - "Ruleset"
  - "TopStop"

### DAML-Document Example "Modify a parameter":

```

<daml command="write">
  <account>
    <accountName>an-acc-0021</accountName>
    <info>Test Account: Tel 012 345 67 89, invalidated 1.1.2016</info>
  </account>
</daml>

```

### DAML-Document Example "Add a parameter":

```

<daml command="write">

```

```

    <account>
      <accountName>an-acc-0021</accountName>
      <validUntil>2016-01-01T09:30:00</validUntil>
    </account>
  </daml>

```

### DAML-Document Example "Delete a parameter ":

```

<daml command="write">
  <account>
    <accountName>an-acc-0021</accountName>
  <!-- Variant 1: -->
    <parameterA></parameterA>
  <!-- Variant 2: -->
    <parameter/>
  </account>
</daml>

```

## "Account" Parameter Configuration

### "Account" Basic Parameter

#### DAML Authorization needed for:

```
grantAccessToAccounts <USERNAME> read/write
```

#### List of Parameters:

```

<account>
  . . .
  <accountName>ACC_NAME</accountName>
  <info>ACC_INFO</info>
  <tenant>ACC_TENANT</tenant>
  . . .
  <username>ACC_SIP_USERNAME</username>
  <password>ACC_SIP_PASSWORD</password>
  <maxChannels>ACC_CHANNEL</maxChannels>
  <emergencyLocation>ACC_LOCATION</emergencyLocation>
  . . .
</account>

```

	Variable:	Format:	Range:	Default:	Description:	Version:
1	<accountName> <b>ACC_NAME</b> </accountName>	String	max. 32 characters	none	<b>Mandatory configuration!</b>  Assigns the unambiguous name of the account	5.2
2	<tenant> <b>ACC_TENANT</b> </tenant>	String	max. 128 characters	none	Assigns the tenant of the account	5.2

					<b>Note:</b> The tenant must be already created in the system of the VoIP Switch!	
3	<info> <b>ACC_INFO</b> </info>	String	max. 128 characters	none	Any information	5.2
4	<username> <b>ACC_SIP_USERNAME</b> </username>	String	max. 32 characters	none	<b>Mandatory configuration!</b> Assigns the unambiguous SIP user name of the account	5.2
					<b>Note:</b> Without SIP username no SIP CPE can register to a telephone number (SIP address) of this account!	
5	<password> <b>ACC_SIP_PASSWORD</b> </password>	String	max. 32 characters	none	<b>Mandatory configuration!</b> Assigns the SIP password of the account	5.2
					<b>Note:</b> Without SIP password no SIP CPE can register to a telephone number (SIP address) of this account!	
6	<maxChannels> <b>ACC_CHANNEL</b> </maxChannels>	String	Empty or number >=0	empty	Determines how many concurrent connections are possible for this account.  Value Range:  ◇ empty: No limitations ◇ 0 : no channels no incoming and outgoing connections are possible ◇ >=1 : Exact number of possible channels	5.2
7	<emergencyLocation> <b>ACC_LOCATION</b> </emergencyLocation>	String	empty or defined emergency location; max. 64 characters	empty	Assigns one Emergency Location to the account.  Value Range:  ◇ empty: The system-wide default emergency location is used ◇ Location Name: The location must be already configured in the emergency call configuration of this Aarenet VoIP Switch!	5.2
					The available locations can be requested with DAML-Query: "List of all Emergency Locations"	

## "Account" Routing Parameter

DAML Authorization needed for:

```
grantAccessToAccounts <USERNAME> read/write
```

List of Parameters:

```

<account>
    . . .
    <routingTable>ACC_ROUTING_TABLE</routingTable>
    <ruleset>ACC_RULESET</ruleset>
    . . .
</account>

```

Variable:	Format:	Range:	Default:	Description:	Version:
1 <routingTable> <b>ACC_ROUTING_TABLE</b> </routingTable>	String	empty or defined Routing Table Name; max. 45 characters	empty	Assigns one Routing Table to the account  Value Range: ◇ empty: Only OnNet connections are possible ◇ Routing Table Name: The routing table name must be already configured in the routing configuration of this Aarenet VoIP Switch!	5.2
2 <ruleset> <b>ACC_RULESET</b> </ruleset>	String	defined Ruleset Name; max. 128 characters	none	Assigns none or n Rulesets to the account  Value Range: ◇ none: No Ruleset are used ◇ Ruleset Name: The Ruleset name must be already configured in the routing configuration of this Aarenet VoIP Switch!	5.2

#### Remarks for modifying or deleting of Ruleset:

1. If a Ruleset Name has to be modified/deleted then all configured Ruleset?s of this account must be deleted first, e.g.:

```

<daml command="write">
  <account>
    <accountName>SIP_TRUNK_DAML</accountName>
    <ruleset/>
  </account>
</daml>

```

2. Then all needed Ruleset have to be rewritten again, e.g.:

```

<daml command="write">
  <account>
    <accountName>SIP_TRUNK_DAML</accountName>
    <ruleset>Subscriber</ruleset>
    <ruleset>Block :
      All Outgoing
      090*
      Calls</ruleset>
    <ruleset>Signal :
      3 Digit
      Signaling</ruleset>
  </account>
</daml>

```

**Note**

## "Account" Rating Parameter

DAML Authorization needed for:

```
grantAccessToAccounts <USERNAME> read/write
```

List of Parameters:

```
<account>
    . . .
    <pricelist>ACC_PRICELIST</pricelist>
    <sendAoc>ACC_AOC</sendAoc>
    . . .
</account>
```

Variable:	Format:	Range:	Default:	Description:	Version:
1 <pricelist> <b>ACC_PRICELIST</b> </pricelist>	String	empty or defined Pricelist Name; max. 32 characters	empty	A configured Pricelist Name  Value Range: ◇ empty: No AOC, TopStop or Call Rating is possible if no price list is assigned to the account ◇ Pricelist Name: The pricelist must be already configured in the rating configuration of this Aarenet VoIP Switch!	5.2
2 <sendAoc> <b>ACC_AOC</b> </sendAoc>	String	Selection: • true • false	false	Activate sending advice of charge AOC to all addresses of the account.	5.2

## "Account" TopStop Parameter

DAML Authorization needed for:

```
grantAccessToAccounts <USERNAME> read/write
```

List of Parameters:

```
<account>
    . . .
    <sysAccountTopStop>
        <type>TOPSTOP_OWNER</type>
        <valueMax>TOPSTOP_MAX</valueMax>
        <monthlyReset>TOPSTOP_RESET</monthlyReset>
        <alarmLevel>TOPSTOP_ALARM_LEVEL</alarmLevel>
        <dailyMax>TOPSTOP_DAILY_MAX</dailyMax>
        <dailyReset>TOPSTOP_DAILY_RESET</dailyReset>
        <alarmEmail>TOPSTOP_EMAIL</alarmEmail>
        <blockAlarmSent>TOPSTOP_EMAIL_SENT</blockAlarmSent>
```

```

<valueCurrent>TOPSTOP_CURRENT_VALUE</valueCurrent>
<valueCurrent
mode="TOPSTOP_CURRENT_VALUE_UPDATE_MODE">TOPSTOP_CURRENT_VALUE_UPDATE
</valueCurrent>
<dailyCurrent>TOPSTOP_CURRENT_DAILY_VALUE</dailyCurrent>
<dailyCurrent
mode="TOPSTOP_CURRENT_DAILY_UPDATE_MODE">TOPSTOP_DAILY_VALUE_UPDATE</
dailyCurrent>
</sysAccountTopStop>
</account>

```

Variable:	Format:	Range:	Default:	Description:
1 <type> <b>TOPSTOP_OWNER</b> </type>	String	Selection:	SYS ◇ SYS ◇ ACC ◇ ADD	Assigns with which user role a TopStop is created. This defines a role for which the TopStop is visible.  SYS: The TopStop visible only for system administrator.  ACC: The TopStop visible for account operator. It is visible for roles system administrator and account operator.  ADD: The TopStop visible for subscriber. It is visible for the roles system administrator, account operator and subscriber.
2 <valueMax> <b>TOPSTOP_MAX</b> </valueMax>	Number	Empty or value >= 0.00	Empty	Assigns the charging limit per month for the account. It may not be exceeded the charging sum of all connections of this account.  Empty: No charging limit is supervised
3 <monthlyReset> <b>TOPSTOP_RESET</b> </monthlyReset>	String	Selection:	true • true • false	Assigns if the monthly maximum limit is reset at the starting of a new month.  If set to "false" the maximum limit can be interpreted as prepaid charge.
4 <alarmLevel> <b>TOPSTOP_ALARM_LEVEL</b> </alarmLevel>	Number	Empty	Empty	Assigns at with percentage of the monthly maximum limit a warning

			or value = 0.0 ? 1.0		email is generated; e.g. 70%:  150.00 * 0.7 105.00  Empty:  No near limit is monitored.
5	<dailyMax> <b>TOPSTOP_DAILY_MAX</b> </dailyMax>	Number	Empty  or value >= 0.00	Empty	Assigns the charging limit per day for the account. may not be exceeded the charging sum of all connections of this account.  Empty:  No charging limit is supervised
6	<dailyReset> <b>TOPSTOP_DAILY_RESET</b> </dailyReset>	String	Selection: true  • true • false		Assigns if the daily maximum limit is reset the starting of a new d  If set to "false" the maximum limit can be interpreted as prepaid charge.
7	<alarmEmail> <b>TOPSTOP_EMAIL</b> </alarmEmail>	String	Empty  or Email Address, max. 64 characters	Empty	Assigns the email address which is informed when the:  ◇ the month near li level is reache ◇ the da or mo chargi limits reache  Empty:  No email will be sent.  Email address:  At overrun of t level and the charging limit email is sent.
8	<blockAlarmSent> <b>TOPSTOP_EMAIL_SENT</b> </blockAlarmSent>	String	Selection: false  • true • false		<b>Read Only!</b>  Indicates that an email was sent when the dai monthly charging limit reached.
9	<valueCurrent> <b>TOPSTOP_CURRENT_VALUE</b> </valueCurrent>	Number	>= 0.00		<b>Read Only!</b>  Current total charges since resetting the charging limit.
10	<b>mode="TOPSTOP_CURRENT_VALUE_UPDATE_MODE"</b>	String	Selection:  • force • update		To modify current value <valueCurrent> the "mode" attribute is requ  • force:

- update:

### Examples:

```
<valueCurrent
mode="force">10.00<valueCurrent
</valueCurrent mode="update"/>
```

Assigns the new value to the "mode=force"

### Example:

```
<valueCurrent
mode="force">10.00<valueCurrent
```

### Read Only!

Current total charges since resetting the charging limit.

To modify current daily value in <dailyCurrent> the "mode" attribute is required

- force:

11	TOPSTOP_CURRENT_VALUE_UPDATE	Number	value >= 0.00	
12	<dailyCurrent> TOPSTOP_CURRENT_DAILY_VALUE </dailyCurrent>	Number	>= 0.00	
13	mode="TOPSTOP_CURRENT_DAILY_UPDATE_MODE"	String	Selection: • force • update	

- update:

#### Examples:

```
<dailyCurrent
mode="force">10.00<dailyCurr
<dailyCurrent mode="update"/>
```

Assigns the new value  
the "mode=force"

#### Example:

```
<dailyCurrent
mode="force">10.00<dailyCurr
```

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TOPSTOP\_DAILY\_VALUE\_UPDATE

Number value >= 0.00

#### Remarks for modifying or deleting of TopStop:

1. If a TopStop has to be modified/deleted then all configured TopStop of this account must be deleted first, e.g.:

```
<daml command="write">
  <account>
    <accountName>SIP_TRUNK_DAML</accountName>
    <sysAccountTopStop/>
  </account>
</daml>
```

2. Then all needed TopStop have to be rewritten again, e.g.:

```
<daml command="write">
  <account>
    <accountName>SIP_TRUNK_DAML</accountName>
    <sysAccountTopStop>
      <type>SYS</type>
      <valueMax>20.0</valueMax>
      <alarmLevel>0.7</alarmLevel>
      <monthlyReset>true</monthlyReset>
      <alarmEmail>info@company.com</alarmEmail>
      <valueCurrent
mode="update"/>
    </sysAccountTopStop>
  </account>
</daml>
```

Note

## "Account" Advanced Parameter

DAML Authorization needed for:

```
grantAccessToAccounts <USERNAME> read/write
```

### List of Parameters:

```
<account>
    . . .
    <validAfter>ACC_VALID_AFTER</validAfter>
    <validUntil>ACC_VALID_UNTIL</validUntil>

    <specialArrangement>ACC_SPECIAL_ARRAGEMENT</specialArrangement>
    <useMediaServer>ACC_USE_MEDIA_SERVER</useMediaServer>
    <network/>

    <sendingHoldStream>ACC_HOLD_STREAM</sendingHoldStream>

    <alarmOnExpiry>ACC_ALARM_ON_EXPIRY</alarmOnExpiry>
    <maliciousCallerId>ACC_MCID</maliciousCallerId>
    . . .
</account>
```

Variable:	Format:	Range:	Default:	Description:	Version:
1 <validAfter> <b>ACC_VALID_AFTER</b> </validAfter>	String	Empty or Date/Time	Empty	Date/time of the activation of the account (and its associated addresses)  Empty: The account is active.  Account Valid From:  The account is active beginning at Date/Time.  Date/Time-Format:  The format conforms to the XML standard ?xml-DateTime Data Type?: yyyy-MM-dd'T'HH:mm:ss	5.2
2 <validUntil> <b>ACC_VALID_UNTIL</b> </validUntil>	String	Empty or Date/Time	Empty	Date/Time of the deactivation of the account (and its associated addresses)  Empty: The account is active.  Account Valid Until:  The account is deactivated beginning at Date/Time.  Date/Time-Format:	5.2

				The format conforms to the XML standard ?xml-DateTime Data Type?: yyyy-MM-dd'T'HH:mm:ss
3	<specialArrangement> <b>ACC_SPECIAL_ARRANGEMENT</b> </specialArrangement>	String {{{range}}} false Selection: • true • false	When "Special Arrangement" is 5.2 enabled then the CLIP delivered by the SIP CPE is accepted by the Aarenet VoIP Switch. The feature is also known as "CLIP no Screening".  If it is not activated then the Aarenet VoIP Switch compares the delivered CLIP with the addresses of this account and replaces it with the best match. If there is no best no best then the main number is used as CLIP. If the account has no main number defined in then the Aarenet VoIP Switch rejects the connection setup. <b>Note:</b> According to the juridical situation of a country this feature may not used or only restrictively!	
4	<useMediaServer> <b>ACC_USE_MEDIA_SERVER</b> </useMediaServer>	String {{{range}}} false Selection: • true • false	This parameter is not yet described in detail. Proposed procedure see section "Not Documented DAML Parameter"	5.2
5	<sendingHoldStream> <b>ACC_HOLD_STREAM</b> </sendingHoldStream>	String {{{range}}} false Selection: • true • false		5.2
6	<alarmOnExpiry> <b>ACC_ALARM_ON_EXPIRY</b> </alarmOnExpiry>	String {{{range}}} false Selection: • true • false	This parameter is not yet described in detail. Proposed procedure see section "Not Documented DAML Parameter"	5.2
7	<maliciousCallerId> <b>ACC_MCID</b> </maliciousCallerId>	String {{{range}}} false Selection: • true • false	This parameter is not yet described in detail. Proposed procedure see section "Not Documented DAML Parameter"	5.2

## DAML-Document for Treating "Address"

This DAML-document allows the treatment of a SIP address (telephone number), its features and parameters:

- ◇ Create an address
- ◇ Delete an address
- ◇ Read an address
- ◇ Modify parameters or features of an existing address
- ◇ Add parameters or features to an existing address
- ◇ Delete parameters or features of an existing address

The account which is associated with an address is treated with the DAML-Document for Treating "Account".

## DAML XML-Container for "Address"

All XML fields are listed in the address container:

- ◇ The XML field `<address>` defines the XLS address container
- ◇ Mandatory is the XML field `<number>` which identifies the address unambiguously.
- ◇ Mandatory is the XML field `<account>` which identifies the associated account unambiguously
- ◇ The order of the XML fields is arbitrary

### XLS Address-Container for "Address":

```
<address>
  <account>ACC_NAME</account>
  <number>ADDR_NUMBER</number>
  .
  .
  <featureN>
    <parameterN>PARAMETER_N</parameterN>
    .
    .
  </featureN>
  .
  .
  <parameterA>PARAMETER_A</parameterA>
  .
  .
</address>
```

## DAML-Document for Create, Delete, Read and Write an "Address" (Telephony Number)

### Create an "Address"

By creating an address all its features and parameters may be configured too.

#### DAML-Document:

```
<daml command="write">
  <address>
    <accountName>ACC_NAME</accountName>
    <number>ADDR_NUMBER</number>
    .
    .
    <featureN>
      <parameterN>PARAMETER_N</parameterN>
      .
      .
    </featureN>
    .
    .
    <parameterA>PARAMETER_A</parameterA>
    .
    .
  </address>
</daml>
```

#### Examples see:

- ◇ Create a "Residential Account" with 1 Public Number
- ◇ Create a "SIP Trunk" Account with 100 Public Numbers for ISDN PBX behind SIP CPE
- ◇ Create a vPBX Account with 5 Public Numbers

## Delete an "Address"

By deleting an address all its:

- ◇ Feature and parameter configurations will be deleted too
- ◇ Associated VoiceBox messages will be deleted too

### DAML-Document Example:

```
<daml command="delete">
  <address>
    <accountName>an-acc-0021</accountName>
    <number>0123456789</number>
  </address>
</daml>
```

## Read an "Address"

By reading an address all its:

- ◇ Feature and parameter configurations will be read

### DAML-Document Example:

```
<daml command="read">
  <address>
    <accountName>an-acc-0021</accountName>
    <number>0123456789</number>
  </address>
</daml>
```

## Modify, Add or Delete an Address's Parameter or Feature

By writing to an existing address its parameters can be:

- ◇ Modified
- ◇ Added
- ◇ Deleted

### Warning

Make sure that you write the account name, number and/or XML names correctly. Else the result may be unpredictable even when the response is 200 OK!

For details see [HTTP RESPONSE](#)

### Modifying:

By re-writing an account's parameter its configuration will be changed:

◇ The feature and/or parameter configurations will be modified

### Adding:

By adding a parameter its configuration will be created:

◇ The feature and/or parameter configuration will be created

### Deleting:

By writing an "empty" value to a parameter:

◇ the feature and/or parameter will be deleted

### DAML-Document Example "Modify a parameter":

```
<daml command="write">
  <account>
    <accountName>an-acc-0021</accountName>
    <number>0123456789</number>
    <language>en</language>
  </account>
</daml>
```

### DAML-Document Example "Add a parameter":

```
<daml command="write">
  <account>
    <accountName>an-acc-0021</accountName>
    <number>0123456789</number>
    <validUntil>2016-01-01T09:30:00</validUntil>
  </account>
</daml>
```

### DAML-Document Example "Delete a parameter ":

```
<daml command="write">
  <address>
    <accountName>an-acc-0021</accountName>
  <!-- Variant 1: -->
    <validUntil></validUntil>
  <!-- Variant 2: -->
    <validUntil/>
  </address>
</daml>
```

## "Address" Parameter Configuration

DAML Authorization needed for:

```
grantAccessToAccounts <USERNAME> read/write
```

## List of Parameters:

```
<address>

<!-- SIP Address Main Parameterr -->

    <account>ADDR_ACC_NAME</account>
    <number>ADDR_NUMBER</number>
    <domain>ADDR_DOMAIN</domain>
    <displayName>ADDR_DISPLAY</displayName>

<!-- SIP Address Registration Parameter -->

    <validAfter>ADDR_VALID_AFTER</validAfter>
    <validUntil>ADDR_VALID_UNTIL</validUntil>
    <portoutNumber>ADDR_PORTOUT_NUMBER</portoutNumber>
    <registersViaMainNumber>ADDR_REG_VIA_MAIN</registersViaMainNumber>
    <balancedRouting>ADDR_REG_BALANCED</balancedRouting>

<!-- Number Attributes & Directives -->

    <mainNumber>ADDR_MAIN_NUMB</mainNumber>
    <privateNumber>ADDR_PRIVATE_NUMB</privateNumber>
    <baseNumber>ADDR_BASE_NUMB</baseNumber>
    <signalingOnly>ADDR_SIGNAL_ONLY</signalingOnly>
    <singleLocation>ADDR_SINGLE_LOCATION</singleLocation>
    <preferredNumber>ADDR_PREFERRED_NUMB</preferredNumber>
    <disabled>ADDR_DISABLED</disabled>
    <blocked>ADDR_BLOCKED</blocked>

    <queueLen>ADDR_QUEUE_LENGTH</queueLen>
    <priorityCall>ADDR_PRIORITY_CALL</priorityCall>

    <endpointName>ADDR_ENPOINT_NAME</endpointName>
    <mgcpProfile>ADDR_MGCP_PROFIL</mgcpProfile>
    <msisdn>ADDR_FMC_1</msisdn>
    <msisdn2>ADDR_FMC_2</msisdn2>

<!-- Feature: Outgoing Number Presentation -->

    <showClip>ADDR_CLIP_SHOW</showClip>
    <hideClip>ADDR_CLIP_HIDE</hideClip>
    <publicClip>ADDR_CLIP_PUBLIC</publicClip>

<!-- Feature: VoiceMail Box -->

    <messageBox>

        <autoAuthentication>ADDR_VM_AUTO_AUTH</autoAuthentication>
        <skipMessageMenu>ADDR_VM_SKIP_MESSAGE</skipMessageMenu>
        <language>ADDR_VM_LANGUAGE</language>
        <signalNewMessage>ADDR_VM_SIGNAL_NEW_MESSAGE</signalNewMessage>
        <subscribedMwiOnly>ADDR_VM_SIGNAL_MWI_ONLY</subscribedMwiOnly>
        <email>ADDR_VM_EMAIL</email>
        <formatMp3>ADDR_VM_AUDIO_FORMAT</formatMp3>
        <blocked>ADDR_VM_BLOCKED</blocked>
        <faxOnly>ADDR_VM_FAX_ONLY</faxOnly>
        <faxAutoDetect>ADDR_VM_FAX_VOICE_DETECT</faxAutoDetect>
    </messageBox>

<!-- Feature: Call Forwarding -->

    <cfu>ADDR_CFU</cfu>
    <cff>ADDR_CFF</cff>
    <cfb>ADDR_CFB</cfb>
    <cfnr>ADDR_CFN</cfnr>
    <cfo>ADDR_CFO</cfo>
    <dnd>ADDR_DND</dnd>
    <rrn>ADDR_RRN</rrn>

<!-- Feature: Diverse -->

    <language>ADDR_LANGUAGE</language>
    <callWaiting>ADDR_MGCP_CALL_WAITING</callWaiting>
    <callHold>ADDR_MGCP_CALL_HOLD</callHold>
    <noOfferOnBusy>ADDR_CALL_NO_OFFER</noOfferOnBusy>
```

```

<autoRecord>ADDR_CALL_RECORD_AUTOMATIC</autoRecord>
<recordingEmail>ADDR_CALL_RECORD_EMAIL</recordingEmail>

<!-- Feature: vPBX -->

<pbx>ADDR_GROUP_VPBX</pbx>
<groupMember>ADDR_GROUP_VPBX_MEMBER</groupMember>
<presenceGroup>ADDR_GROUP_PRESENCE</presenceGroup>
<monitorGroup>ADDR_GROUP_MONITOR</monitorGroup>
<messageGroup>ADDR_GROUP_MESSAGE</messageGroup>

<!-- Feature: AdminCenter Access -->

<addressAdmin>

  <username>ADDR_ADMIN_UN</username>
  <password>ADDR_ADMIN_PW</password>
  <language>ADDR_ADMIN_LANGUAGE</language>
  <email>ADDR_ADMIN_EMAIL</email>
</addressAdmin>
</address>

```

## "Address" SIP Address Main Parameter

Variable:	Format:	Range:	Default:	Description:	Version:
1 <account> <b>ADDR_ACC_NAME</b> </account>	String	max. 32 characters	Empty	<b>Mandatory configuration!</b>  Assigns the unambiguous name of the account to which the telephone number belongs	5.2
2 <number> <b>ADDR_NUMBER</b> </number>	Number	max. 50 characters	false	<b>Mandatory configuration!</b>  Assigns an unambiguous telephone number	5.2
3 <domain> <b>ADDR_DOMAIN</b> </domain>	String	max. 128 characters	Empty	IP address or FQDN of the Aarenet VoIP Switch.	5.2
4 <displayName> <b>ADDR_DISPLAY</b> </displayName>	String	max. 64 characters	Empty	Displayed name information at the called party side.	5.2

## "Address" SIP Address Registration Parameter

Variable:	Format:	Range:	Default:	Description:	Version:
1 <validAfter> <b>ADDR_VALID_AFTER</b> </validAfter>	String	Date/Time	Empty  or yyyy-MM-dd'T'HH:mm:ss	Date/time of the activation of the telephony number (SIP address)  Empty:  ◇ The number is active.  Address Valid From:  ◇ The number becomes active starting at Date/Time.	5.2
2 <validUntil> <b>ADDR_VALID_UNTIL</b>	String	Date/Time	Empty	Date/time of the <b>deactivation</b> of the telephony number (SIP	5.2

	</validUntil>		or yyyy-MM-dd'T'HH:mm:ss	address) Empty:  ◇ The number is active.  Address Valid Until:  ◇ The number becomes inactive starting at Date/Time.	
3	<portoutNumber> <b>ADDR_PORTOUT_NUMBER</b> </portoutNumber>	String	Empty Empty or Outputping Prefix, max. 50 characters	Needed in Switzerland only!  When ADD_PORT_OUT_NUMBER is assigned and the number deactivated in ADD_VALID_UNTIL then the Aarenet VoIP Switch will redirect an incoming call toward this telephone number back into the PSTN.  Example:  ◇ Outported Number : 0123456789 ◇ NPRN new provider : 098000 ◇ Setting in ADD_PORT_OUT_N 98000 ◇ The rewriting result will be: 0980000123456789	5.2
4	<registersViaMainNumber> <b>ADDR_REG_VIA_MAIN</b> </registersViaMainNumber>	String	Selection: false  • true • false	Assigns that this telephone number is registered via the main number of this account.	5.2
5	<singleLocation> <b>ADDR_SINGLE_LOCATION</b> </singleLocation>	String	Selection: false  • true • false	Assigns that only one SIP CPE can register to this telephone number.	5.10
6	<balancedRouting> <b>ADDR_REG_BALANCED</b> </balancedRouting>	String	Selection: false  • true • false	Assigns that registering SIP CPEs can provide a balancing Q value directive.  The Aarenet VoIP Switch will routing incoming calls according the balancing directive toward the SIP CPEs.	5.2

## "Address" Number Attributes & Directives

	Variable:	Format:	Range:	Default:	Description:	Version:
1	<mainNumber> <b>ADDR_MAIN_NUMB</b> </mainNumber>	String	Selection:	false  • true • false	Assigns this telephone number as the main number of this account.  <b>Per account only one main number is allowed!</b>	5.2
2	<privateNumber> <b>ADDR_PRIVATE_NUMB</b> </privateNumber>	String	Selection:	false  • true	Assigns this telephone number as the internal telephone number of this vPBX.	5.2

3	<baseNumber> <b>ADDR_BASE_NUMB</b> </baseNumber>	String	Selection: false  • true • false	<p>This number is the base number of 5.2 this account. The base number serves as a search pattern to identify an open number space.</p> <p><b>Per account there can be only one base number!</b></p> <p>Example:</p> <p style="padding-left: 40px;">Base Number : 012345</p> <p style="padding-left: 40px;">Regexp: 012345.*</p> <p>Matches, e.g. the numbers:</p> <p style="padding-left: 40px;">012345 0 012345 100 012345 99999</p>	
4	<signalingOnly> <b>ADDR_SIGNAL_ONLY</b> </signalingOnly>	String	Selection: false  • true • false	Assigns that this telephone number can be used only for outgoing connections.	5.2
5	<preferredNumber> <b>ADDR_PREFERRED_NUMB</b> </preferredNumber>	String	Selection: false  • true • false	Assigns that this telephone number will always be used as CLIP for all outgoing calls from any telephone number of this account.	5.2
6	<disabled> <b>ADDR_DISABLED</b> </disabled>	String	Selection: false  • true • false	<p>Assigns that this telephone number is disabled for incoming and outgoing connections.</p> <p>This number cannot be created a second time on this Aarenet VoIP Switch. This feature can be used for the reservation of a telephone number.</p>	5.2
7	<blocked> <b>ADDR_BLOCKED</b> </blocked>	String	Selection: false  • true • false	<p>Assigns that this telephone number cannot used for outgoing connections.</p> <p>Incoming connection to this telephone number are possible.</p>	5.2
8	<queueLen> <b>ADDR_QUEUE_LENGTH</b> </queueLen>	Number	Empty 0 or value >= 0	<p>Assigns how many concurrent incoming calls toward this internal vPBX telephone number can be offered at the same time.</p> <p>The calling sides receive the alerting tone.</p> <p>The call queue is used for presenting incoming calls by the monitor function (see below VPBX_MONITOR_GROUP).</p> <p>If this this feature is working depends also from the implementation on the called SIP device!</p>	5.2
9	<priorityCall> <b>ADDR_PRIORITY_CALL</b> </priorityCall>	String	Selection: false  • true • false	<p>Assigns that outgoing calls from this telephone number are handled with priority.</p> <p>In extreme cases the Aarenet VoIP Switch terminates existing connections for routing a priority call toward the PSTN.</p>	5.2

10	<endpointName> <b>ADDR_ENPOINT_NAME</b> </endpointName>	String		This parameter is not yet described in detail. Proposed procedure see section "Not Documented DAML Parameter"	6.2
11	<mgcpProfile> <b>ADDR_MGCP_PROFIL</b> </mgcpProfile>	String		This parameter is not yet described in detail. Proposed procedure see section "Not Documented DAML Parameter"	5.2
12	<msisdn> <b>ADDR_FMC_1</b> </msisdn>			<b>Do not use!</b>  This parameter is not yet described in detail. Proposed procedure see section "Not Documented DAML Parameter"	5.10
13	<msisdn2> <b>ADDR_FMC_2</b> </msisdn2>	String		<b>Do not use!</b>  This parameter is not yet described in detail. Proposed procedure see section "Not Documented DAML Parameter"	5.10

## "Address" Feature: Outgoing Number Presentation

Variable:	Format:	Range:	Default:	Description:	Version:
1 <showClip> <b>ADDR_CLIP_SHOW</b> </showClip>	String	Selection:	false	<p>These two parameters ADDR_CLIP_SHOW and ADDR_CLIP_HIDE determine whether and how the CLIP of the calling side is modified by the Aarenet VoIP Switch.</p> <p><b>ADD_SHOW_CLIP:</b> false <b>ADD_HIDE_CLIP:</b> false</p> <p>The CLIP will not be modified by the Aarenet VoIP Switch</p> <p><b>ADD_SHOW_CLIP:</b> true <b>ADD_HIDE_CLIP:</b> false</p> <p>The Aarenet VoIP Switch forces to display the CLIP.</p> <p><b>ADD_SHOW_CLIP:</b> false <b>ADD_HIDE_CLIP:</b> true</p> <p>The Aarenet VoIP Switch forces to hide the CLIP Calling Restriction CLIR</p> <p><b>ADD_SHOW_CLIP:</b> true <b>ADD_HIDE_CLIP:</b> true</p> <p>Invalid, the result is undefined!</p>	5.2
2 <hideClip> <b>ADDR_CLIP_HIDE</b> </hideClip>	String	Selection:	false	<p>See description of ADDR_CLIP_SHOW above.</p> <p>• true • false</p>	5.2
3 <publicClip> <b>ADDR_CLIP_PUBLIC</b> </publicClip>	Number	max. 50 characters	Empty	<p>Assigns this telephone number as CLIP of this internal vPBX telephone number for outgoing connections toward the PSTN. The assigned public number must be from the public number range of this vPBX.</p> <p>Note:</p>	5.4

- This parameter is valid only with private numbers.
- If no public number is configured as a public identity then no outgoing connections from this internal vPBX telephone number toward the PSTN is possible!

## "Address" Feature: VoiceMail Box

	Variable:	Format:	Range:	Default:	Description:	Version:
1	<messageBox> ... </messageBox>				XML container which defines the VoiceMail Box parameters that is associated with this telephone number.	5.2
2	<autoAuthentication> <b>ADDR_VM_PIN</b> </autoAuthentication>	Number	Empty or value >= 0		<b>Write only!</b>  Assigns the PIN to be used for the VoiceMail Box access.  Note:  It is recommended to use only digits, else the user will have problems with a legacy telephone keypad.	5.2
3	<autoAuthentication> <b>ADDR_VM_AUTO_AUTH</b> </autoAuthentication>	String	Selection:	false  • true • false	Assigns whether the PIN is needed when the access is coming from this telephone number.	5.2
4	<skipMessageMenu> <b>ADDR_VM_SKIP_MESSAGE</b> </skipMessageMenu>	String	Selection:	false  • true • false	Assigns that the main menu of the VoiceMail Box are recited.	5.2
5	<language> <b>ADDR_VM_LANGUAGE</b> </language>	String	Selection:	Depends on the address language ADDR_LANGUAGE  • de • en • fr • it	Assigns the language of the announcement texts of the VoiceMail Box.	5.2

de: German  
 en: English  
 fr: French  
 it: Italian

6	<signalNewMessage> <b>ADDR_VM_SIGNAL_NEW_MESSAGE</b> </signalNewMessage>	String	Selection: true <ul style="list-style-type: none"> <li>• true</li> <li>• false</li> </ul>	Assigns that a new recorded message is signaled by the message server of the Aarenet VoIP Switch to the SIP CPE. 5.2
7	<subscribedMwiOnly> <b>ADDR_VM_SIGNAL_MWI_ONLY</b> </subscribedMwiOnly>	String	Selection: true <ul style="list-style-type: none"> <li>• true</li> <li>• false</li> </ul>	Defines whether and how the telephone is informed about a new message in the VoiceMailBox. The format is ?Message Waiting Information MWI?.  true:  Explicit MWI Subscription only: MWI messages are sent to the telephone when it prior subscribed for the WMI service.  false:  Implicitly, all registered devices: A MWI message is automatically sent to all telephones registered to this address. The telephone must not log in with the WMI service.
8	<email> <b>ADDR_VM_EMAIL</b> </email>	String	Empty      Empty or Email Address,	Assigns the email address to which a VoiceMail message will 5.2

			max. 64 characters	be sent.	
9	<formatMp3> <b>ADDR_VM_AUDIO_FORMAT</b> </formatMp3>	String	Selection: false <ul style="list-style-type: none"><li>• true</li><li>• false</li></ul>	Assigns that the message audio file is MP3 formatted.  Note: The default is WAV PCM coded.	5.2
10	<blocked> <b>ADDR_VM_BLOCKED</b> </blocked>	String	Status: no <ul style="list-style-type: none"><li>• no</li><li>• Blocked Minutes</li></ul>	<b>Read Only!</b>  States, if the VoiceMail Box is blocked and how long it is blocked.  no:  If ?no? is returned then the VoiceMailBox is not blocked.  Blocked Minutes:  Remaining duration of the blocking in minutes	5.2
11	<faxOnly> <b>ADDR_VM_FAX_ONLY</b> </faxOnly>	String	Selection: false <ul style="list-style-type: none"><li>• true</li><li>• false</li></ul>	Assigns if this VoiceMail Box is enabled to receive Fax only.	5.7
12	<faxAutoDetect> <b>ADDR_VM_FAX_VOICE_DETECT</b> </faxAutoDetect>	String	Selection: false <ul style="list-style-type: none"><li>• true</li><li>• false</li></ul>	Assigns that this VoiceMail Box detects automatically if an incoming message is a voice message or a Fax.	5.7

## "Address" Feature: Call Forwarding

**Note** It is recommended not to use the call forward CF for vPBX call distributions. Use the AdminCenter feature "Distributions" for this purpose.

	Variable:	Format:	Range:	Default:	Description:	Version:
1	<cfu> <b>ADDR_CFU</b> </cfu>	Telephone Number	max. 50 characters	Empty	Assigns an "Call Forwarding Unconditional CFU" redirection telephone number for this telephone number.	5.2
2				Empty		5.2

	<cff> <b>ADDR_CFF</b> </cff>	Telephone Number	max. 50 characters		Assigns a "Call Forwarding Fallback CFF" redirection telephone number for this telephone number.	
3	<cfb> <b>ADDR_CFB</b> </cfb>	Telephone Number	max. 50 characters	Empty	Assigns a "Call Forwarding Busy CFB" redirection telephone number for this telephone number.	5.2
4	<cfnr> <b>ADDR_CFNr</b> </cfnr>	Telephone Number	max. 50 characters	Empty	Assigns a "Call Forwarding Not Reachable CFNR" redirection telephone number for this telephone number.	5.2
5	<cfo> <b>ADDR_CFO</b> </cfo>	Telephone Number	max. 50 characters	Empty	Assigns an "Call Forking CFO" redirection telephone number for this telephone number.	5.2
6	<dnd> <b>ADDR_DND</b> </dnd>	String	Selection: false		Assigns "Do not Disturb DND" for this telephone number. Incoming calls are connected to a corresponding announcement.	5.2
7	<rrn> <b>ADDR_RRN</b> </rrn>	String	Selection: false		Assigns "Reject anonymous calls RRN" for this telephone number. Incoming calls are connected to a corresponding announcement.	5.2

## "Address" Feature: Diverse

	Variable:	Format:	Range:	Default:	Description:
1	<language> <b>ADDR_LANGUAGE</b> </language>	String	Selection:	Depends on the address language ADDR_LANGUAGE	Assigns the language of the announcement, e.g. do not disturb, used for this telephone number.  de: German en: English fr: French it: Italian
2	<callWaiting> <b>ADDR_MGCP_CALL_WAITING</b> </callWaiting>	String	Selection: false		Assigns for MGCP MTA if it is allowed to signal a new incoming call during a running call  false:  Incoming calls in busy state are not signaled.  true:  Incoming calls in busy state are signaled.
3	<callHold> <b>ADDR_MGCP_CALL_HOLD</b> </callHold>	String	Selection: false		Assigns for MGCP MTA if it is allowed to set the calling side on hold.  false:  Incoming calls cannot be set on hold.  true:  Incoming calls can be set on hold.
4	<noOfferOnBusy> <b>ADDR_CALL_NO_OFFER</b> </noOfferOnBusy>	String	Selection: false		Assigns if this telephone number is signaled a new incoming call during busy state.
5	<recordingEmail> <b>ADDR_CALL_RECORD_EMAIL</b> </recordingEmail>	String	Empty	Empty	Assigns the email address to which a recorded call will be sent

			or Email Address, max. 64 characters	Note:  The recording is started and stopped on a by call basis by the user due to pressing the record key or stimulus *#-procedure on its telephone keypad.
6	<autoRecord> <b>ADDR_CALL_RECORD_AUTOMATIC</b> </autoRecord>	String	Selection: false  • true • false	Assigns if all calls will be recorded automatically and sent to the assigned email address in ADDR_CALL_RECORD_EMAIL

## "Address" Feature: Group

**Note** Groups are an important feature for the creation of a vPBX and the presence services within a vPBX.

	Variable:	Format:	Range:	Default:	Description:	Version:
1	<pbx> <b>ADDR_GROUP_VPBX</b> </pbx>	String	max. 64 characters	none	Assigns to which vPBX this telephone number belongs.  <b>Note:</b>  • The vPBX group must be created already in the system of the VoIP Switch!	5.2
2	<groupMember> <b>ADDR_GROUP_VPBX_MEMBER</b> </groupMember>	String			Assigns from which other groups this telephone number may refer additional authorizations.  A telephone number can be member of n groups.  <b>Note:</b>  • The groups must be created already in the system of the VoIP Switch!	5.2
3	<presenceGroup> <b>ADDR_GROUP_PRESENCE</b> </presenceGroup>	String	max. 64 characters	none	Assigns the group whose members are allowed to subscribe for the Presence service of this telephone number.  <b>Note:</b>  • The group must be created already in the system of the VoIP Switch! • Presence information are visible in this group and related superior groups	5.2
4	<monitorGroup> <b>ADDR_GROUP_MONITOR</b> </monitorGroup>	String	max. 64 characters	none	Assigns the group whose members are allowed to subscribe for the Monitor service of this telephone	5.2

number.

**Note:**

- The group must be created already in the system of the VoIP Switch!
- Monitoring information are visible in this group and related superior groups

<messageGroup>  
**ADDR\_GROUP\_MESSAGE**  
</messageGroup>

String max. 64 characters none

Assigns the group whose members are allowed to subscribe for the Message service of this telephone number. 5.2

5

**Note:**

- The group must be created already in the system of the VoIP Switch!
- Message information are visible in this group and related superior groups

### "Address" Feature: AdminCenter Access

	Variable:	Format:	Range:	Default:	Description:	Version:
1	<addressAdmin> ... </addressAdmin>	String			This parameter is not yet described in detail. Proposed procedure see section "Not Documented DAML Parameter"	5.2
2	<username> <b>ADDR_ADMIN_UN</b> </username>	String			This parameter is not yet described in detail. Proposed procedure see section "Not Documented DAML Parameter"	5.2
3	<password> <b>ADDR_ADMIN_PW</b> </password>	String			This parameter is not yet described in detail. Proposed procedure see section "Not Documented DAML Parameter"	5.2
4	<language> <b>ADDR_ADMIN_LANGUAGE</b> </language>	String			This parameter is not yet described in detail. Proposed procedure see section "Not Documented DAML Parameter"	5.2
5	<email> <b>ADDR_ADMIN_EMAIL</b> </email>	String		Empty	This parameter is not yet described in detail. Proposed procedure see section "Not Documented DAML Parameter"	5.2

## DAML-Query

## DAML-Query: "List of All Account Names"

This Query requests the names of all accounts which are configured in this Aarenet VoIP Switch.

The CRM must transfer a HTTP GET with the following parameters:

`query=account`

◇ Query directive to request all account names

### DAML-Query Example:

```
https://<IP_ADDRESS>:8447/dataaccesscenter/daml?query=accounts
```

### DAML-Response Example:

```
<daml status="ok">
  <account>an-acc-0020</account>
  <account>an-acc-0021</account>
  <account>an-acc-0022</account>
  <account>an-acc-0023</account>
</daml>
```

## DAML-Query: "List of the n Last Connections of a Telephone Number"

This query requests a list of the last n connections and connection attempts of a phone number. This DAML query delivers the raw data of a connection. It is the job of the CRM application to transform these data into the desired form and representation.

### Warning

Limit the requested number of entries as it blocks the database during the query execution!  
This can cause alarming messages from the Aarenet VoIP Switch monitoring.

The CRM must transfer a HTTP GET with the following parameters:

`query=calls`

◇ Query directive to request the last connections and connection attempts of a telephone number

`account=QUERY_ACCOUNT`

◇ Unambiguous name of an account

`number=QUERY_NUMBER`

◇ Unambiguous telephone number or SIP address

`entries=QUERY_ENTRY`

◇ Number of the requested connections and connection attempts

### DAML-Query Example:

```
https://<IP_ADDRESS>:8447/dataaccesscenter/daml?query=calls&account=an-acc-0021&number=01234567890&ent
```

### DAML-Response:

```

<daml status="ok">
  <call>
    <time>CALL_START</time>
    <duration>CALL_DURATION</duration>
    <direction>CALL_DIRECTION</direction>
    <number>CALL_PEER_NUMBER</number>
    <charge>CALL_CHARGE</charge>
  </call>
  . . .
</daml>

```

### DAML-Response Example:

```

<daml status="ok">
  <call>
    <time>2013-05-24T14:55:13</time>
    <duration>12527</duration>
    <direction>out</direction>
    <number>0987654321</number>
    <charge>0.16</charge>
  </call>
  <call>
    <time>2013-05-24T10:20:38</time>
    <duration>0</duration>
    <direction>in</direction>
    <number>0987654321</number>
  </call>
</daml>

```

### Parameters:

	Variable:	Format:	Range:	Default:	Description:	Version:
1	<call> ... </call>	none	none	none	Container which holds the call details	5.2
2	<time> <b>CALL_START</b> </time>	yyyy-MM-dd'T'HH:mm:ss	none	none	Date/time of the call?s start	5.2
3	<duration> <b>CALL_DURATION</b> </duration>	yyyy-MM-dd'T'HH:mm:ss	>=0	none	Duration of the connection in milliseconds.	5.2
4	<direction> <b>CALL_DIRECTION</b> </direction>	String	Selection: in out	none	If the duration is 0 then it was a call attempt. Indicates whether it is an incoming or outgoing connection. in: Incoming connection out: Outgoing connection	5.2
5	<number> <b>CALL_PEER_NUMBER</b> </number>	String	Telephone Number	none	Shows the telephone number of the other participant of the connection.  The meaning depends on the <b>CALL_DIRECTION</b> : in:	5.2

					At incoming connections this is the number of the calling side (CLIP)	
				out:	At Outgoing connection this is the dialed number	
6	<charge> <b>CALL_CHARGE</b> </charge>	String	>= 0.00	none	Charge of an outgoing connection	5.2

## DAML-Query: "List of all Ruleset Names"

This Query requests the names of all ruleset which are configured in this Aarenet VoIP Switch.

The CRM must transfer a HTTP GET with the following parameters:

`query=rulesets`

◇ Query directive to request all configured ruleset names

### DAML-Query Example:

```
https://<IP_ADDRESS>:8447/dataaccesscenter/daml?query=rulesets
```

### DAML-Response Example:

```
<daml status="ok">
  <ruleset>Route: Subscriber</ruleset>
  <ruleset>Signal: 2 Digit Signaling</ruleset>
  <ruleset>Signal: 3 Digit Signaling</ruleset>
  <ruleset>Block: International Calls</ruleset>
  <ruleset>Block: Satellite Calls</ruleset>
  <ruleset>Block: Block All Except Emergency Calls</ruleset>
</daml>
```

## DAML-Query: "List of all Emergency Locations"

This Query requests the names of all emergency locations which are configured in this Aarenet VoIP Switch.

The CRM must transfer a HTTP GET with the following parameters:

`query=emergencyLocations`

◇ Query directive to request all configured emergency locations

### DAML-Query Example:

```
https://<IP_ADDRESS>:8447/dataaccesscenter/daml?query=emergencyLocations
```

## DAML-Response Example:

```
<daml status="ok">
  <emergencyLocation>GN0001 Aeugst am Albis</emergencyLocation>
  <emergencyLocation>GN0002 Affoltern am Albis</emergencyLocation>
  <emergencyLocation>GN0003 Bonstetten</emergencyLocation>
</daml>
```

## DAML-Query: "List of All Announcement Names of a Telephone Number"

This query requests the names of all announcement names of a telephone number.

The CRM must transfer a HTTP GET with the following parameters:

**query=announcements**

◇ Query directive to request all announcement names of a telephone number.

**account=QUERY\_ACCOUNT**

◇ Unambiguous name of an account

**number=QUERY\_NUMBER**

◇ Unambiguous telephone number or SIP address

## DAML-Query Example:

```
https://<IP_ADDRESS>:8447/dataaccesscenter/daml?query=announcements&account=an-acc-0021&number=01234
```

## DAML-Response:

```
<daml status="ok">
  <message>
    <id>ANNOUNCEMENT_ID</id>
    <duration>ANNOUNCEMENT_DURATION</duration>
    <name>ANNOUNCEMENT_NAME</name>
  </message>
  . . .
</daml>
```

## DAML-Response Example:

```
<daml status="ok">
  <message>
    <id>179</id>
    <name>Office Time</name>
    <duration>16325</duration>
  </message>
  <message>
    <id>180</id>
    <name>Weekend</name>
    <duration>253346</duration>
  </message>
</daml>
```

## Parameters:

	Variable:	Format:	Range:	Default:	Description:	Version:
1	<message> ... </message>	none	none	none	Container which holds the announcement parameters	5.2
2	<id> <b>ANNOUNCEMENT_ID</b> </id>	Number	>=0	none	Unambiguous identification of the announcement	5.2
3	<name> <b>ANNOUNCEMENT_NAME</b> </name>	String		none	Name of the announcement	5.2
4	<duration> <b>ANNOUNCEMENT_DURATION</b> </duration>	Number	>=0, in milliseconds	none	Duration of the announcement	5.2

## DAML-Query: "List of all VoiceMail Messages of a Telephone Number"

This query requests the identifications of all messages of a telephone number's VoiceMail box.

The CRM must transfer a HTTP GET with the following parameters:

`query=voiceMessages`

◇ Query directive to request all message information of a telephone number's VoiceMail Box.

`account=QUERY_ACCOUNT`

◇ Unambiguous name of an account

`number=QUERY_NUMBER`

◇ Unambiguous telephone number or SIP address

### DAML-Query Example:

```
https://<IP_ADDRESS>:8447/dataaccesscenter/daml?query=voiceMessages&account=an-acc-0021&number=012345
```

### DAML-Response:

```
<daml status="ok">  
  <message>  
    <id>MESSAGE_ID</id>  
    <name>MESSAGE_NAME</name>  
    <number>MESSAGE_NUMBER</number>  
    <timeStart>MESSAGE_DATE_TIME</timeStart>  
    <timePlayed>MESSAGE_PLAYED</timePlayed>  
    <duration>MESSAGE_DURATION</duration>  
    <saved>MESSAGE_SAVED</saved>  
  </message>  
  ...  
</daml>
```

### DAML-Response Example:

```
<daml status="ok">
```

```

<message>
  <id>167</id>
  <name>Dani</name>
  <number>0987654321</number>
  <timeStart>2016-01-14T10:29:00</timeStart>
  <timePlayed>never</timePlayed>
  <duration>35563</duration>
  <saved>>false</saved>
</message>
<message>
  <id>786</id>
  <name></name>
  <number>0283746551</number>
  <timeStart>2016-01-20T16:12:54</timeStart>
  <timePlayed>never</timePlayed>
  <duration>13876</duration>
  <saved>>false</saved>
</message>
</daml>

```

### Parameters:

	Variable:	Format:	Range:	Default:	Description:	Version:
1	<message> ... </message>	none	none	none	Container which holds the message parameters	5.2
2	<id> <b>MESSAGE_ID</b> </id>	Number	>=0	none	Unambiguous identification of the message	5.2
3	<name> <b>MESSAGE_NAME</b> </name>	String		none	Name in the <Display> part of the SIP-Header "From:"	5.2
4	<number> <b>MESSAGE_NUMBER</b> </number>	Number	>=0	none	Telephony number of the calling side.	5.2
5	<timeStart> <b>MESSAGE_DATE_TIME</b> </timeStart>	yyyy-MM-dd'T'HH:mm:ss		none	Date/time of the recording of the message	5.2
6	<timePlayed> <b>MESSAGE_PLAYED</b> </timePlayed>	String	Selection:  never yyyy-MM-dd'T'HH:mm:ss	none	Date/time, when the message was played the last time.  never:  The message was never played.	5.2
7	<timeStart> <b>MESSAGE_DATE_TIME</b> </timeStart>	yyyy-MM-dd'T'HH:mm:ss		none	Date/time of the recording of the message	5.2
8	<duration> <b>MESSAGE_DURATION</b> </duration>	Number	>=0, in milliseconds	none	Duration of the message	5.2
9	<saved> <b>MESSAGE_SAVED</b> </saved>	String	Selection:  true false	none	Indicates whether the message was marked by the user for a longer retention	5.2

# DAML-Document Examples

## Create a "Residential Account" with 1 Public Number

### Requirement:

- ◇ Account for private customer with one telephone number
- ◇ Customer public number 0987654321
- ◇ Account TopStop with 50.00, warning at 70%, email to user@home.com
- ◇ Block calls toward 09\* numbers
- ◇ VoiceMail Box active with email to user@home.com
- ◇ CFF to telephone number 0123456789

See also: "Download DAML Test Scripts for a Residential User"

```
<daml command="write">
<!-- Define the Residential Account -->
    <account>
        <accountName>RESIDENTIAL_DAML</accountName>
        <info>Residential Test Account</info>
        <password>lgRP9vBe</password>
        <username>5umWIuce</username>
        <validAfter>2016-01-01 00:00:00</validAfter>
        <validUntil/>
        <tenant>DAML_Tenant</tenant>
        <routingTable>Routing_to_PSTN</routingTable>
        <pricelist>Price_DAML_SUBSCRIBER</pricelist>
        <emergencyLocation>Default_Location</emergencyLocation>
        <sysAccountTopStop>
            <type>SYS</type>
            <monthlyReset>true</monthlyReset>
            <valueMax>50.0</valueMax>
            <alarmLevel>0.7</alarmLevel>
            <alarmEmail>user@home.com</alarmEmail>
        </sysAccountTopStop>
        <ruleset>Subscriber</ruleset>
        <ruleset>Block_09*</ruleset>
    </account>

<!-- Define Residential Telephone Number -->
    <address>
        <account>RESIDENTIAL_DAML</account>
        <number>0987654321</number>
        <language>de</language>
        <disabled>>false</disabled>
        <validAfter>2016-01-01 00:00:00</validAfter>
        <validUntil/>
        <portoutNumber/>
        <messageBox>
            <language>de</language>
            <email>user@home.com</email>
            <signalNewMessage>true</signalNewMessage>
            <skipMessageMenu>>false</skipMessageMenu>
            <autoAuthentication>>false</autoAuthentication>
            <subscribedMwiOnly>true</subscribedMwiOnly>
            <faxOnly>>false</faxOnly>
            <faxAutoDetect>>false</faxAutoDetect>
            <formatMp3>>false</formatMp3>
        </messageBox>
        <cff>0123456789</cff>
    </address>
</daml>
```

## Create a "SIP Trunk" Account with 100 Public Numbers for ISDN PBX behind SIP CPE

### Requirement:

- ◇ SIP Trunk Account for a customer with an ISDN PBX connected to SIP CPE
- ◇ 100 public telephone number block 0555555550 ? 99
- ◇ The main telephone number is 0555555550, the other telephone numbers are registered via main number
- ◇ Account TopStop with 2000.00, warning at 70%, email to info@customer.com
- ◇ Block calls toward 09\* numbers
- ◇ CFF to mobile number 03333333
- ◇ Signaling 3 digit 500 ? 599 toward the SIP CPE/PBX
- ◇ No VoiceMail Boxes

See also: "Download DAML Test Scripts for a SIP Trunk"

```
<daml command="write">
<!-- Define the SIP Trunk Account -->

  <account>

    <accountName>SIP_TRUNK_DAML</accountName>
    <info>SIP Trunk Test Account</info>
    <password>1j3RRw3r</password>
    <username>MQa0b3eM</username>
    <validAfter>2016-01-01 00:00:00</validAfter>
    <validUntil/>
    <tenant>DAML_Tenant</tenant>
    <routingTable>Routing_to_PSTN</routingTable>
    <pricelist>Price_DAML_SUBSCRIBER</pricelist>
    <emergencyLocation>Default_Location</emergencyLocation>
    <sysAccountTopStop>
      <type>SYS</type>
      <monthlyReset>true</monthlyReset>
      <valueMax>2000.00</valueMax>
      <alarmLevel>0.7</alarmLevel>
      <alarmEmail>info@customer.com</alarmEmail>
    </sysAccountTopStop>
    <ruleset>Subscriber</ruleset>
    <ruleset>Block 09*</ruleset>
    <ruleset>Signaling: 3 Digit</ruleset>
  </account>

<!-- Define CFF -->

  <callForward>

    <name>CFF 03333333</name>
    <type>CFF</type>
    <destReplace>03333333</destReplace>
    <priority>10</priority>
  </callForward>

<!-- Define SIP Trunk Main Telephone Number -->

  <address>

    <account>SIP_TRUNK_DAML</account>
    <number>0555555550</number>
    <language>de</language>
    <disabled>>false</disabled>
    <validAfter>2016-01-01 00:00:00</validAfter>
    <validUntil/>
    <portoutNumber/>
    <mainNumber>true</mainNumber>
    <registersViaMainNumber>>false</registersViaMainNumber>
  </address>

<!-- Define the other SIP Trunk Telephone Numbers -->

  <address>
```

```

        <account>SIP_TRUNK_DAML</account>
        <number>0555555551</number>
        <language>de</language>
        <disabled>>false</disabled>
        <validAfter>2016-01-01 00:00:00</validAfter>
        <validUntil/>
        <portoutNumber/>
        <mainNumber>>false</mainNumber>
        <registersViaMainNumber>>true</registersViaMainNumber>
    </address>
    <address>
        <account>SIP_TRUNK_DAML</account>
        <number>0555555552</number>
        <language>de</language>
        <disabled>>false</disabled>
        <validAfter>2016-01-01 00:00:00</validAfter>
        <validUntil/>
        <portoutNumber/>
        <mainNumber>>false</mainNumber>
        <registersViaMainNumber>>true</registersViaMainNumber>
    </address>

<!-- ... -->

</daml>

```

## Create a vPBX Account with 5 Public Numbers

### Requirement:

- ◇ Account for vPBX
- ◇ 3 public telephone numbers 0123456787 ? 89
- ◇ vPBX requirement:
  - Access for vPBX administrator
  - Max. 8 channels
  - Max. 10 internal telephone numbers
  - Max. 5 App "an IP-Phone"
- ◇ Account TopStop with 150.00, warning at 70%, email to info@customer.com
- ◇ Block calls toward 09\* numbers

See also: "Download DAML Test Scripts for a vPBX"

```

<daml command="write">
<!-- Define the vPBX -->

    <group>

        <name>VPBX_DAML</name>
        <parent>DAML_Tenant</parent>
        <tenant>DAML_Tenant</tenant>
        <pbx>>true</pbx>
    </group>

<!-- Define the vPBX Administrator -->

    <admin>

        <username>VPBX_DAML_admin</username>
        <language>en</language>
        <password>E4igy5f!</password>
        <tenant>DAML_Tenant</tenant>
        <role>PBX</role>
        <pbx>VPBX_DAML</pbx>
    </admin>

<!-- Define the vPBX Attributes -->

    <groupAttribute>

```

```

    <group>VPBX_DAML</group>
    <name>maxPrivateAddr</name>
    <value>10</value>
  </groupAttribute>
  <groupAttribute>
    <group>VPBX_DAML</group>
    <name>maxDevAnIpPhone</name>
    <value>5</value>
  </groupAttribute>
  <groupAttribute>
    <group>VPBX_DAML</group>
    <name>channels</name>
    <value>8</value>
  </groupAttribute>

```

<!-- Define the vPBX Account -->

```

  <account>

    <accountName>VPBX_DAML</accountName>
    <info>vPBX Test Account </info>
    <password>a27fKuwer</password>
    <username>4wku4sPE8r</username>
    <validAfter>2016-01-01 00:00:00</validAfter>
    <validUntil/>
    <tenant>DAML_Tenant</tenant>
    <routingTable>Routing_to_PSTN</routingTable>
    <pricelist>Price_DAML_Tenant</pricelist>
    <emergencyLocation>Default_Location</emergencyLocation>
    <sysAccountTopStop>
      <type>SYS</type>
      <monthlyReset>true</monthlyReset>
      <valueMax>150.00</valueMax>
      <alarmLevel>0.7</alarmLevel>
      <alarmEmail>info@customer.com</alarmEmail>
    </sysAccountTopStop>
    <ruleset>Subscriber</ruleset>
    <ruleset>Block 09*</ruleset>
  </account>

```

<!-- Define the vPBX Public Telephone Numbers -->

```

  <address>

    <number>0123456787</number>
    <account>VPBX_DAML</account>
    <language>en</language>
    <disabled>>false</disabled>
    <validAfter>2016-01-01 00:00:00</validAfter>
    <validUntil/>
    <portoutNumber/>
    <pbx>VPBX_DAML</pbx>
    <presenceGroup>VPBX_DAML</presenceGroup>
    <monitorGroup>VPBX_DAML</monitorGroup>
    <messageGroup>VPBX_DAML</messageGroup>
    <groupMember>VPBX_DAML</groupMember>
    <groupMember>DAML_Tenant</groupMember>
  </address>
  <address>
    <number>0123456788</number>
    <account>VPBX_DAML</account>
    <language>en</language>
    <disabled>>false</disabled>
    <validAfter>2016-01-01 00:00:00</validAfter>
    <validUntil/>
    <portoutNumber/>
    <pbx>VPBX_DAML</pbx>
    <presenceGroup>VPBX_DAML</presenceGroup>
    <monitorGroup>VPBX_DAML</monitorGroup>
    <messageGroup>VPBX_DAML</messageGroup>
    <groupMember>VPBX_DAML</groupMember>
    <groupMember>DAML_Tenant</groupMember>
  </address>
  <address>
    <number>0123456789</number>
    <account>VPBX_DAML</account>
    <language>en</language>
    <disabled>>false</disabled>
    <validAfter>2016-01-01 00:00:00</validAfter>
    <validUntil/>
    <portoutNumber/>
    <pbx>VPBX_DAML</pbx>
    <presenceGroup>VPBX_DAML</presenceGroup>
    <monitorGroup>VPBX_DAML</monitorGroup>
    <messageGroup>VPBX_DAML</messageGroup>
    <groupMember>VPBX_DAML</groupMember>
    <groupMember>DAML_Tenant</groupMember>
  </address>

```

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## Overview of the DataAccessCenter

The DataAccessCenter offers a HTTP/HTTPS based interface which allows 3rd-party applications to access the operational data of the Aarenet VoIP Switch. Therefore it is predestined for the configuration of the Aarenet VoIP Switch via a CRM system of the provider.

The DataAccessCenter offers with the DAML interface (Data Access Markup Language DAML) an API and protocol to configure operational data of the Aarenet VoIP Switch.

The following features distinguish the DataAccessCenter:

- ◇ The DAML interface allows the configuration of all customer parameters of the VoIP Switch.
- ◇ The DAML documents are exchanged with the HTTP/HTTPS protocol.
- ◇ The access is protected by a HTTP-Authentication.
- ◇ The interface supports XML-based data (version XML 1.0).
- ◇ The XLS transformation XSLT is supported for checks and formalizing.
- ◇ For the immediate use DAML-Formats are prepared for managing of account, phone numbers and other often used features.
- ◇ Customized DAML-Formats can be created when required.

DAML allows to configure the following operative parameters:

- ◇ "Account":  
For the creation and treatment of customers account
- ◇ "Address":  
For the creation and treatment of public and internal phone numbers in customer accounts and vPBX
- ◇ etc.

DAML allows queries of the configured parameters or other data:

- ◇ Account:  
Query of all account names
- ◇ Connection list:  
Query of the CDR of the last N connections of a phone number
- ◇ etc.

The DAML protocol bases on XML formatted documents (Introduction to XML):

- ◇ The basic rules of the XML standards are valid, version XML 1.0
- ◇ The order of the XML elements is free
- ◇ If XML elements are not provided during the creation of an instance, the default value of the Aarenet VoIP Switch is considered.

The DAML protocol can be customized with XLST script. Possibilities are:

- ◇ Make the interface stable
- ◇ Define defaults
- ◇ Do some rough checks

With XLST a XML document can be converted into another XML document. With the DAML interface it is possible to treat incoming XML documents, e.g. from a CRM application, with defined XLST commands, before they are processed as DAM-documents. Vice versa outgoing XML documents can be reworked with defined XLST commands and the result sent to the CRM application.

**Note** XLST conversions must be developed and checked in corporation with the Aarenet engineering.

# How To Start with the DataAccessCenter

## Get in Touch with DAML

1. Get an DataAccessCenter account on:
  - Test Aarenet VoIP Switch
  - Pre-productive Aarenet VoIP Switch
2. Get IP access to the DataAccessCenter of this Aarenet VoIP Switch
3. Download the executable DAML Test Scripts:  
"Download DAML Test Scripts for a Residential User" 📄
4. Play around with the DAML Test Scripts for getting a feeling how it works
5. Do configuration in the ConfigCenter and read it out with DAML

## CRM Implementation

1. Implement the DataAccessCenter access and HTTP-Digest Authentication
2. For a starter implement HTTP-Get for a query
  - Basic read
  - Queries for, e.g.:
    - Ruleset
3. Implement the basic HTTP-Post data exchange for "write", "read", "delete"
4. Implement the "Account Treating" :
  - Basic create, read, delete
  - Parameter add, modify, delete for:
    - account
    - tenant
    - info
    - SIP credentials
    - etc.
5. Implement the "Address Treating" :
  - Basic create, read, delete
  - Parameter add, modify, delete for:
    - number
    - etc.
6. Implement the basic HTTP-Get data exchange for data queries :
  - Queries for:
    - Ruleset
    - etc.

## Best Practices with DAML Parameters

### Not Documented DAML Parameter

The DAML interface development evolves continuously. This documentation may lag behind the development of features and parameters

If upon a DAML read out such a DAML parameter is discovered and its naming points to a feature of interest then:

1. Login into the ConfigCenter
2. Search for a matching parameter name and study its possible configurations
3. Modify this possibly matching parameter
4. Make a new read out via DAML and compare it with the first read out. See if it matches your expectations.

If this process is not successful then contact the "VoIP Switch Supplier Support"

## Usage of Diverse DAML Parameter

- ◇ Use for the "Account Name" the CRM "Customer ID"
- ◇ Write in the "Account Info" information that a supporter helps to find a customer, without consulting the CRM for its ID

## Provisioning the DataAccessCenter for CRM Application Access

To grant an external CRM application access to the operational data via DataAccessCenter the following configuration at DataAccessCenter component level must be set up:

1. **HTTP / HTTPS- Authorization-Credentials:**  
Defines the username and password the CRM application has to use for accessing the DataAccessCenter
2. **Group-based Authorization:**  
Defines to which groups the CRM application has access.
3. **Authorization for the use of to DAML-Documents and DAML-Queries:**  
Defines which DAML-Documents and DAML-Queries the CRM application is allowed to use. It is possible to specify the rights to "create", "read", "write", "delete".
4. **XLTS files to be used for interpretation and formatting:**  
Defines, whether the configuration data must be pre and/or reworked by means of XLST conversions.

### Note

The configuration of the DataAccessCenter component has to be accomplished in close collaboration between the provider and the Aarenet project manager.

## Access via IP Network to the DataAccessCenter

For the DataAccessCenter the URL must have the following form:

### DAML Access:

```
https://</nowiki><IP_ADDRESS>:8447/dataaccesscenter
```

## DAML-Document Exchange via HTTP/HTTPS

### HTTP DIGEST Authentication

Prior the transfer of DAML-documents a CRM application has to apply the HTTP-Digest authentication in order to get access to the DataAccessCenter interface.

## HTTP POST Data Exchange

The CRM application must transmit its instructions with a HTTP-POST-Request toward the DataAccessCenter. By the use of the directive POST big data volumes can be transmitted in the HTTP body. Moreover, they are not visible within the URL.

The CRM must transfer with HTTP POST a DAML-document with the following directives:

**write:**

◇ The given data will be written. This directive creates or modifies instances.

**read:**

◇ The given data will be read and delivered.

**delete:**

◇ The given data will be deleted.

### DAML-Document Example:

```
<daml command="read">
    . . .
</daml>
```

## HTTP GET Data Exchange

DAMI Queries permit the queries of data which cannot be determined with usual DAML-Directives, e.g. connections list.

DAML-Queries are executed with HTTP GET Requests.

For the DataAccessCenter the URL must have the following form:

### DAML-Query Example:

```
https://</nowiki><IP_ADDRESS>:8447/dataaccesscenter/daml?query=DAML_QUERY_NAME
```

## HTTP RESPONSE (Execution and Error Codes)

After the data were successfully transmitted and treated, the response code "200 OK" is returned.

<b>Note</b>	"200 OK" means that the request could be treated by the DataAccessCenter but <b>not</b> that the outcome is correct.  For example:  ◇ Unknown XML fields are ignored and not reported with an error code
-------------	--

- ◇ A read request for an account with a wrong written account name will return a "200 OK" with an empty response
- ◇ A write request to an account with a wrong written account name will return a "200 OK" but the expected account was not modified but a new account with the wrong written name was created with just the modified parameter configuration in it.
- ◇ A query without correct query directive will return a "200 OK" with an empty response.

In the case of an error a code "4xx <ERROR\_DESCRIPTION>" or "5xx <ERROR\_DESCRIPTION>" is returned, e.g., "500 Internal Server Error".

If the cause of the problem is not deductive from the error message, the error situation can be examined from the information in the log file of the component DataAccessCenter.

## DAML-Document "Account" for Treating Customer Accounts

This DAML-document allows the treatment of accounts, its features and parameters:

- ◇ Create an account
- ◇ Delete an account
- ◇ Read an account
- ◇ Modify parameters or features of an existing account
- ◇ Add parameters or features to an existing account
- ◇ Delete parameters or features of an existing account

The SIP addresses (phone numbers) which are associated with the account are treated with the DAML-Document for Treating "Address".

## DAML XML-Container for "Account"

All XML fields are listed in the account container:

- ◇ The XML field <account> defines the XLS account container
- ◇ Mandatory is the XML field <accountName> which identifies the account unambiguously.
- ◇ The order of the XML fields is arbitrary

### Account-Container for "Account":

```

<account>
  < accountName>ACC_NAME</accountName>
  .
  .
  <featureN>
    <parameterN>PARAMETER_N</parameterN>
    .
    .
  </featureN>
  .
  .
  <parameterA>PARAMETER_A</parameterA>
  .
  .
</account>

```

# DAML-Document for Create, Delete, Read and Write an "Account"

## Create an "Account"

By creating an account all its features and parameters may be configured too.

### DAML-Document:

```
<daml command="write">
  <account>
    <accountName>ACC_NAME</accountName>
    .
    .
    <featureN>
      <parameterN>PARAMETER_N</parameterN>
      .
      .
    </featureN>
    <parameterA>PARAMETER_A</parameterA>
    .
    .
  </account>
</daml>
```

### Examples see:

- ◇ Create a "Residential Account" with 1 Public Number
- ◇ Create a "SIP Trunk" Account with 100 Public Numbers for ISDN PBX behind SIP CPE
- ◇ Create a vPBX Account with 5 Public Numbers

## Delete an "Account"

By deleting an account all its:

- ◇ Feature and parameter configurations will be deleted too
- ◇ Associated addresses and their configurations will be deleted too

### DAML-Document Example:

```
<daml command="delete">
  <account>
    <accountName>an-acc-0021</accountName>
  </account>
</daml>
```

## Read an "Account"

By reading an account all its:

- ◇ Feature and parameter configurations will be read

### DAML-Document Example:

```

<daml command="read">
  <account>
    <accountName>an-acc-0021</accountName>
  </account>
</daml>

```

## Modify, Add or Delete an Account's Parameter or Feature

By writing to an existing account its parameters can be:

- ◇ Modified
- ◇ Added
- ◇ Deleted

### Warning

Make sure that you write the account name and/or XML names correctly. Else the result may be unpredictable even when the response is 200 OK!

For details see chapter "HTTP RESPONSE"

### Modifying:

By re-writing an account's parameter its configuration will be changed:

- ◇ The feature and/or parameter configurations will be modified
- ◇ Special modifying procedures are required for:
  - "Ruleset"
  - "TopStop"

### Adding:

By adding a parameter its configuration will be created:

- ◇ The feature and/or parameter configurations will be created

### Deleting:

By writing an "empty" value to a parameter:

- ◇ The feature and/or parameter will be deleted
- ◇ Special deleting procedures are required for:
  - "Ruleset"
  - "TopStop"

### DAML-Document Example "Modify a parameter":

```

<daml command="write">
  <account>
    <accountName>an-acc-0021</accountName>
    <info>Test Account: Tel 012 345 67 89, invalidated 1.1.2016</info>
  </account>
</daml>

```

### DAML-Document Example "Add a parameter":

```

<daml command="write">
  <account>
    <accountName>an-acc-0021</accountName>
    <validUntil>2016-01-01T09:30:00</validUntil>
  </account>
</daml>

```

### DAML-Document Example "Delete a parameter ":

```

<daml command="write">
  <account>
    <accountName>an-acc-0021</accountName>
<!-- Variant 1: -->
    <parameterA></parameterA>
<!-- Variant 2: -->
    <parameter/>
  </account>
</daml>

```

## "Account" Parameter Configuration

### "Account" Basic Parameter

DAML Authorization needed for:

```
grantAccessToAccounts <USERNAME> read/write
```

### List of Parameters:

```

<account>
  . . .
  <accountName>ACC_NAME</accountName>
  <info>ACC_INFO</info>
  <tenant>ACC_TENANT</tenant>
  . . .
  <username>ACC_SIP_USERNAME</username>
  <password>ACC_SIP_PASSWORD</password>
  <maxChannels>ACC_CHANNEL</maxChannels>
  <emergencyLocation>ACC_LOCATION</emergencyLocation>
  . . .
</account>

```

	Variable:	Format:	Range:	Default:	Description:	Version:
1	<accountName> <b>ACC_NAME</b> </accountName>	String	max. 32 characters	none	<b>Mandatory configuration!</b>  Assigns the unambiguous name of the account	5.2
2		String		none	Assigns the tenant of the account	5.2

	<tenant> <b>ACC_TENANT</b> </tenant>		max. 128 characters		<b>Note:</b> The tenant must be already created in the system of the VoIP Switch!	
3	<info> <b>ACC_INFO</b> </info>	String	max. 128 characters	none	Any information	5.2
4	<username> <b>ACC_SIP_USERNAME</b> </username>	String	max. 32 characters	none	<b>Mandatory configuration!</b>  Assigns the unambiguous SIP user name of the account  <b>Note:</b> Without SIP username no SIP CPE can register to a telephone number (SIP address) of this account!	5.2
5	<password> <b>ACC_SIP_PASSWORD</b> </password>	String	max. 32 characters	none	<b>Mandatory configuration!</b>  Assigns the SIP password of the account  <b>Note:</b> Without SIP password no SIP CPE can register to a telephone number (SIP address) of this account!	5.2
6	<maxChannels> <b>ACC_CHANNEL</b> </maxChannels>	String	Empty  or number >=0	empty	Determines how many concurrent connections are possible for this account.  Value Range:  ◇ empty: No limitations ◇ 0 : no channels no incoming and outgoing connections are possible ◇ >=1 : Exact number of possible channels	5.2
7	<emergencyLocation> <b>ACC_LOCATION</b> </emergencyLocation>	String	empty or defined emergency location; max. 64 characters	empty	Assigns one Emergency Location to the account.  Value Range:  ◇ empty: The system-wide default emergency location is used ◇ Location Name: The location must be already configured in the emergency call configuration of this Aarenet VoIP Switch!  The available locations can be requested with DAML-Query: "List of all Emergency Locations"	5.2

## "Account" Routing Parameter

DAML Authorization needed for:

```
grantAccessToAccounts <USERNAME> read/write
```

List of Parameters:

```

<account>
    . . .
    <routingTable>ACC_ROUTING_TABLE</routingTable>
    <ruleset>ACC_RULESET</ruleset>
    . . .
</account>

```

Variable:	Format:	Range:	Default:	Description:	Version:
1 <routingTable> <b>ACC_ROUTING_TABLE</b> </routingTable>	String	empty or defined Routing Table Name; max. 45 characters	empty	Assigns one Routing Table to the account  Value Range: ◇ empty: Only OnNet connections are possible ◇ Routing Table Name: The routing table name must be already configured in the routing configuration of this Aarenet VoIP Switch!	5.2
2 <ruleset> <b>ACC_RULESET</b> </ruleset>	String	defined Ruleset Name; max. 128 characters	none	Assigns none or n Rulesets to the account  Value Range: ◇ none: No Ruleset are used ◇ Ruleset Name: The Ruleset name must be already configured in the routing configuration of this Aarenet VoIP Switch!	5.2

#### Remarks for modifying or deleting of Ruleset:

1. If a Ruleset Name has to be modified/deleted then all configured Ruleset?s of this account must be deleted first, e.g.:

```

<daml command="write">
  <account>
    <accountName>SIP_TRUNK_DAML</accountName>
    <ruleset/>
  </account>
</daml>

```

2. Then all needed Ruleset have to be rewritten again, e.g.:

```

<daml command="write">
  <account>
    <accountName>SIP_TRUNK_DAML</accountName>
    <ruleset>Subscriber</ruleset>
    <ruleset>Block :
      All Outgoing
      090*
      Calls</ruleset>
    <ruleset>Signal :
      3 Digit
      Signaling</ruleset>
  </account>
</daml>

```

**Note**

## "Account" Rating Parameter

DAML Authorization needed for:

```
grantAccessToAccounts <USERNAME> read/write
```

List of Parameters:

```
<account>
    . . .
    <pricelist>ACC_PRICELIST</pricelist>
    <sendAoc>ACC_AOC</sendAoc>
    . . .
</account>
```

Variable:	Format:	Range:	Default:	Description:	Version:
1 <pricelist> <b>ACC_PRICELIST</b> </pricelist>	String	empty or defined Pricelist Name; max. 32 characters	empty	A configured Pricelist Name  Value Range: <ul style="list-style-type: none"> <li>◇ empty: No AOC, TopStop or Call Rating is possible if no price list is assigned to the account</li> <li>◇ Pricelist Name: The pricelist must be already configured in the rating configuration of this Aarenet VoIP Switch!</li> </ul>	5.2
2 <sendAoc> <b>ACC_AOC</b> </sendAoc>	String	Selection: <ul style="list-style-type: none"> <li>• true</li> <li>• false</li> </ul>	false	Activate sending advice of charge AOC to all addresses of the account.	5.2

## "Account" TopStop Parameter

DAML Authorization needed for:

```
grantAccessToAccounts <USERNAME> read/write
```

List of Parameters:

```
<account>
    . . .
    <sysAccountTopStop>
        <type>TOPSTOP_OWNER</type>
        <valueMax>TOPSTOP_MAX</valueMax>
        <monthlyReset>TOPSTOP_RESET</monthlyReset>
        <alarmLevel>TOPSTOP_ALARM_LEVEL</alarmLevel>
        <dailyMax>TOPSTOP_DAILY_MAX</dailyMax>
        <dailyReset>TOPSTOP_DAILY_RESET</dailyReset>
        <alarmEmail>TOPSTOP_EMAIL</alarmEmail>
        <blockAlarmSent>TOPSTOP_EMAIL_SENT</blockAlarmSent>
```

```

<valueCurrent>TOPSTOP_CURRENT_VALUE</valueCurrent>
<valueCurrent
mode="TOPSTOP_CURRENT_VALUE_UPDATE_MODE">TOPSTOP_CURRENT_VALUE_UPDATE
</valueCurrent>
<dailyCurrent>TOPSTOP_CURRENT_DAILY_VALUE</dailyCurrent>
<dailyCurrent
mode="TOPSTOP_CURRENT_DAILY_UPDATE_MODE">TOPSTOP_DAILY_VALUE_UPDATE</
dailyCurrent>
</sysAccountTopStop>
</account>

```

Variable:	Format:	Range:	Default:	Description:
1 <type> <b>TOPSTOP_OWNER</b> </type>	String	Selection:	SYS ◇ SYS ◇ ACC ◇ ADD	Assigns with which user role a TopStop is created. This defines a role for which the TopStop is visible.  SYS: The TopStop visible only for roles system administrator.  ACC: The TopStop visible only for roles system administrator and account operator.  ADD: The TopStop visible only for roles system administrator, account operator and subscriber.
2 <valueMax> <b>TOPSTOP_MAX</b> </valueMax>	Number	Empty or value >= 0.00	Empty	Assigns the charging limit per month for the account. It may not be exceeded the charging sum of all connections of this account.  Empty: No charging limit is supervised
3 <monthlyReset> <b>TOPSTOP_RESET</b> </monthlyReset>	String	Selection:	true • true • false	Assigns if the monthly maximum limit is reset at the starting of a new month.  If set to "false" the maximum limit can be interpreted as prepaid charge.
4 <alarmLevel> <b>TOPSTOP_ALARM_LEVEL</b> </alarmLevel>	Number	Empty	Empty	Assigns at with percentage of the monthly maximum limit a warning

			or value = 0.0 ? 1.0		email is generated; e.g. 70%:  150.00 * 0.7 105.00  Empty:  No near limit is monitored.
5	<dailyMax> <b>TOPSTOP_DAILY_MAX</b> </dailyMax>	Number	Empty  or value >= 0.00	Empty	Assigns the charging limit per day for the account. may not be exceeded the charging sum of all connections of this account.  Empty:  No charging limit is supervised
6	<dailyReset> <b>TOPSTOP_DAILY_RESET</b> </dailyReset>	String	Selection: true  • true • false		Assigns if the daily maximum limit is reset the starting of a new d  If set to "false" the maximum limit can be interpreted as prepaid charge.
7	<alarmEmail> <b>TOPSTOP_EMAIL</b> </alarmEmail>	String	Empty  or Email Address, max. 64 characters	Empty	Assigns the email address which is informed when the:  ◇ the month near li level is reache ◇ the da or mo chargi limits reache  Empty:  No email will be sent.  Email address:  At overrun of t level and the charging limit email is sent.
8	<blockAlarmSent> <b>TOPSTOP_EMAIL_SENT</b> </blockAlarmSent>	String	Selection: false  • true • false		<b>Read Only!</b>  Indicates that an email was sent when the dai monthly charging limit reached.
9	<valueCurrent> <b>TOPSTOP_CURRENT_VALUE</b> </valueCurrent>	Number	>= 0.00		<b>Read Only!</b>  Current total charges since resetting the charging limit.
10	<b>mode="TOPSTOP_CURRENT_VALUE_UPDATE_MODE"</b>	String	Selection:  • force • update		To modify current value <valueCurrent> the "mode" attribute is requ  • force:

- update:

**Examples:**

```
<valueCurrent
mode="force">10.00<valueCurrent
</valueCurrent mode="update" />
```

Assigns the new value to the "mode=force"

**Example:**

```
<valueCurrent
mode="force">10.00<valueCurrent
```

**Read Only!**

Current total charges since resetting the charging limit.

To modify current daily value in <dailyCurrent> the "mode" attribute is required

- force:

11	TOPSTOP_CURRENT_VALUE_UPDATE	Number	value >= 0.00	
12	<dailyCurrent> TOPSTOP_CURRENT_DAILY_VALUE </dailyCurrent>	Number	>= 0.00	
13	mode="TOPSTOP_CURRENT_DAILY_UPDATE_MODE"	String	Selection: <ul style="list-style-type: none"><li>• force</li><li>• update</li></ul>	

- update:

#### Examples:

```
<dailyCurrent
mode="force">10.00<dailyCurr
<dailyCurrent mode="update"/>
```

Assigns the new value  
the "mode=force"

#### Example:

```
<dailyCurrent
mode="force">10.00<dailyCurr
```

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TOPSTOP\_DAILY\_VALUE\_UPDATE

Number value >= 0.00

#### Remarks for modifying or deleting of TopStop:

1. If a TopStop has to be modified/deleted then all configured TopStop of this account must be deleted first, e.g.:

```
<daml command="write">
  <account>
    <accountName>SIP_TRUNK_DAML</accountName>
    <sysAccountTopStop/>
  </account>
</daml>
```

2. Then all needed TopStop have to be rewritten again, e.g.:

```
<daml command="write">
  <account>
    <accountName>SIP_TRUNK_DAML</accountName>
    <sysAccountTopStop>
      <type>SYS</type>
      <valueMax>20.0</valueMax>
      <alarmLevel>0.7</alarmLevel>
      <monthlyReset>true</monthlyReset>
      <alarmEmail>info@company.com</alarmEmail>
      <valueCurrent
mode="update"/>
    </sysAccountTopStop>
  </account>
</daml>
```

Note

## "Account" Advanced Parameter

DAML Authorization needed for:

```
grantAccessToAccounts <USERNAME> read/write
```

### List of Parameters:

```
<account>
    . . .
    <validAfter>ACC_VALID_AFTER</validAfter>
    <validUntil>ACC_VALID_UNTIL</validUntil>

    <specialArrangement>ACC_SPECIAL_ARRAGEMENT</specialArrangement>
    <useMediaServer>ACC_USE_MEDIA_SERVER</useMediaServer>
    <network/>

    <sendingHoldStream>ACC_HOLD_STREAM</sendingHoldStream>

    <alarmOnExpiry>ACC_ALARM_ON_EXPIRY</alarmOnExpiry>
    <maliciousCallerId>ACC_MCID</maliciousCallerId>
    . . .
</account>
```

Variable:	Format:	Range:	Default:	Description:	Version:
1 <validAfter> <b>ACC_VALID_AFTER</b> </validAfter>	String	Empty or Date/Time	Empty	Date/time of the activation of the account (and its associated addresses)  Empty:  The account is active.  Account Valid From:  The account is active beginning at Date/Time.  Date/Time-Format:  The format conforms to the XML standard ?xml-DateTime Data Type?: yyyy-MM-dd'T'HH:mm:ss	5.2
2 <validUntil> <b>ACC_VALID_UNTIL</b> </validUntil>	String	Empty or Date/Time	Empty	Date/Time of the deactivation of the account (and its associated addresses)  Empty:  The account is active.  Account Valid Until:  The account is deactivated beginning at Date/Time.  Date/Time-Format:	5.2

				The format conforms to the XML standard ?xml-DateTime Data Type?: yyyy-MM-dd'T'HH:mm:ss
3	<specialArrangement> <b>ACC_SPECIAL_ARRANGEMENT</b> </specialArrangement>	String {{{range}}} false Selection: • true • false	When "Special Arrangement" is 5.2 enabled then the CLIP delivered by the SIP CPE is accepted by the Aarenet VoIP Switch. The feature is also known as "CLIP no Screening".  If it is not activated then the Aarenet VoIP Switch compares the delivered CLIP with the addresses of this account and replaces it with the best match. If there is no best no best then the main number is used as CLIP. If the account has no main number defined in then the Aarenet VoIP Switch rejects the connection setup. <b>Note:</b> According to the juridical situation of a country this feature may not used or only restrictively!	
4	<useMediaServer> <b>ACC_USE_MEDIA_SERVER</b> </useMediaServer>	String {{{range}}} false Selection: • true • false	This parameter is not yet described in detail. Proposed procedure see section "Not Documented DAML Parameter"	5.2
5	<sendingHoldStream> <b>ACC_HOLD_STREAM</b> </sendingHoldStream>	String {{{range}}} false Selection: • true • false		5.2
6	<alarmOnExpiry> <b>ACC_ALARM_ON_EXPIRY</b> </alarmOnExpiry>	String {{{range}}} false Selection: • true • false	This parameter is not yet described in detail. Proposed procedure see section "Not Documented DAML Parameter"	5.2
7	<maliciousCallerId> <b>ACC_MCID</b> </maliciousCallerId>	String {{{range}}} false Selection: • true • false	This parameter is not yet described in detail. Proposed procedure see section "Not Documented DAML Parameter"	5.2

## DAML-Document for Treating "Address"

This DAML-document allows the treatment of a SIP address (telephone number), its features and parameters:

- ◇ Create an address
- ◇ Delete an address
- ◇ Read an address
- ◇ Modify parameters or features of an existing address
- ◇ Add parameters or features to an existing address
- ◇ Delete parameters or features of an existing address

The account which is associated with an address is treated with the DAML-Document for Treating "Account".

## DAML XML-Container for "Address"

All XML fields are listed in the address container:

- ◇ The XML field `<address>` defines the XLS address container
- ◇ Mandatory is the XML field `<number>` which identifies the address unambiguously.
- ◇ Mandatory is the XML field `<account>` which identifies the associated account unambiguously
- ◇ The order of the XML fields is arbitrary

### XLS Address-Container for "Address":

```
<address>
  <account>ACC_NAME</account>
  <number>ADDR_NUMBER</number>
  .
  .
  <featureN>
    <parameterN>PARAMETER_N</parameterN>
    .
    .
  </featureN>
  .
  .
  <parameterA>PARAMETER_A</parameterA>
  .
  .
</address>
```

## DAML-Document for Create, Delete, Read and Write an "Address" (Telephony Number)

### Create an "Address"

By creating an address all its features and parameters may be configured too.

#### DAML-Document:

```
<daml command="write">
  <address>
    <accountName>ACC_NAME</accountName>
    <number>ADDR_NUMBER</number>
    .
    .
    <featureN>
      <parameterN>PARAMETER_N</parameterN>
      .
      .
    </featureN>
    .
    .
    <parameterA>PARAMETER_A</parameterA>
    .
    .
  </address>
</daml>
```

#### Examples see:

- ◇ Create a "Residential Account" with 1 Public Number
- ◇ Create a "SIP Trunk" Account with 100 Public Numbers for ISDN PBX behind SIP CPE
- ◇ Create a vPBX Account with 5 Public Numbers

## Delete an "Address"

By deleting an address all its:

- ◇ Feature and parameter configurations will be deleted too
- ◇ Associated VoiceBox messages will be deleted too

### DAML-Document Example:

```
<daml command="delete">
  <address>
    <accountName>an-acc-0021</accountName>
    <number>0123456789</number>
  </address>
</daml>
```

## Read an "Address"

By reading an address all its:

- ◇ Feature and parameter configurations will be read

### DAML-Document Example:

```
<daml command="read">
  <address>
    <accountName>an-acc-0021</accountName>
    <number>0123456789</number>
  </address>
</daml>
```

## Modify, Add or Delete an Address's Parameter or Feature

By writing to an existing address its parameters can be:

- ◇ Modified
- ◇ Added
- ◇ Deleted

### Warning

Make sure that you write the account name, number and/or XML names correctly. Else the result may be unpredictable even when the response is 200 OK!

For details see [HTTP RESPONSE](#)

### Modifying:

By re-writing an account's parameter its configuration will be changed:

◇ The feature and/or parameter configurations will be modified

### Adding:

By adding a parameter its configuration will be created:

◇ The feature and/or parameter configuration will be created

### Deleting:

By writing an "empty" value to a parameter:

◇ the feature and/or parameter will be deleted

### DAML-Document Example "Modify a parameter":

```
<daml command="write">
  <account>
    <accountName>an-acc-0021</accountName>
    <number>0123456789</number>
    <language>en</language>
  </account>
</daml>
```

### DAML-Document Example "Add a parameter":

```
<daml command="write">
  <account>
    <accountName>an-acc-0021</accountName>
    <number>0123456789</number>
    <validUntil>2016-01-01T09:30:00</validUntil>
  </account>
</daml>
```

### DAML-Document Example "Delete a parameter ":

```
<daml command="write">
  <address>
    <accountName>an-acc-0021</accountName>
  <!-- Variant 1: -->
    <validUntil></validUntil>
  <!-- Variant 2: -->
    <validUntil/>
  </address>
</daml>
```

## "Address" Parameter Configuration

DAML Authorization needed for:

```
grantAccessToAccounts <USERNAME> read/write
```

## List of Parameters:

```
<address>

<!-- SIP Address Main Parameterr -->

    <account>ADDR_ACC_NAME</account>
    <number>ADDR_NUMBER</number>
    <domain>ADDR_DOMAIN</domain>
    <displayName>ADDR_DISPLAY</displayName>

<!-- SIP Address Registration Parameter -->

    <validAfter>ADDR_VALID_AFTER</validAfter>
    <validUntil>ADDR_VALID_UNTIL</validUntil>
    <portoutNumber>ADDR_PORTOUT_NUMBER</portoutNumber>
    <registersViaMainNumber>ADDR_REG_VIA_MAIN</registersViaMainNumber>
    <balancedRouting>ADDR_REG_BALANCED</balancedRouting>

<!-- Number Attributes & Directives -->

    <mainNumber>ADDR_MAIN_NUMB</mainNumber>
    <privateNumber>ADDR_PRIVATE_NUMB</privateNumber>
    <baseNumber>ADDR_BASE_NUMB</baseNumber>
    <signalingOnly>ADDR_SIGNAL_ONLY</signalingOnly>
    <singleLocation>ADDR_SINGLE_LOCATION</singleLocation>
    <preferredNumber>ADDR_PREFERRED_NUMB</preferredNumber>
    <disabled>ADDR_DISABLED</disabled>
    <blocked>ADDR_BLOCKED</blocked>

    <queueLen>ADDR_QUEUE_LENGTH</queueLen>
    <priorityCall>ADDR_PRIORITY_CALL</priorityCall>

    <endpointName>ADDR_ENPOINT_NAME</endpointName>
    <mgcpProfile>ADDR_MGCP_PROFIL</mgcpProfile>
    <msisdn>ADDR_FMC_1</msisdn>
    <msisdn2>ADDR_FMC_2</msisdn2>

<!-- Feature: Outgoing Number Presentation -->

    <showClip>ADDR_CLIP_SHOW</showClip>
    <hideClip>ADDR_CLIP_HIDE</hideClip>
    <publicClip>ADDR_CLIP_PUBLIC</publicClip>

<!-- Feature: VoiceMail Box -->

    <messageBox>

        <autoAuthentication>ADDR_VM_AUTO_AUTH</autoAuthentication>
        <skipMessageMenu>ADDR_VM_SKIP_MESSAGE</skipMessageMenu>
        <language>ADDR_VM_LANGUAGE</language>
        <signalNewMessage>ADDR_VM_SIGNAL_NEW_MESSAGE</signalNewMessage>
        <subscribedMwiOnly>ADDR_VM_SIGNAL_MWI_ONLY</subscribedMwiOnly>
        <email>ADDR_VM_EMAIL</email>
        <formatMp3>ADDR_VM_AUDIO_FORMAT</formatMp3>
        <blocked>ADDR_VM_BLOCKED</blocked>
        <faxOnly>ADDR_VM_FAX_ONLY</faxOnly>
        <faxAutoDetect>ADDR_VM_FAX_VOICE_DETECT</faxAutoDetect>
    </messageBox>

<!-- Feature: Call Forwarding -->

    <cfu>ADDR_CFU</cfu>
    <cff>ADDR_CFF</cff>
    <cfb>ADDR_CFB</cfb>
    <cfnr>ADDR_CFN</cfnr>
    <cfo>ADDR_CFO</cfo>
    <dnd>ADDR_DND</dnd>
    <rrn>ADDR_RRN</rrn>

<!-- Feature: Diverse -->

    <language>ADDR_LANGUAGE</language>
    <callWaiting>ADDR_MGCP_CALL_WAITING</callWaiting>
    <callHold>ADDR_MGCP_CALL_HOLD</callHold>
    <noOfferOnBusy>ADDR_CALL_NO_OFFER</noOfferOnBusy>
```

```

<autoRecord>ADDR_CALL_RECORD_AUTOMATIC</autoRecord>
<recordingEmail>ADDR_CALL_RECORD_EMAIL</recordingEmail>

<!-- Feature: vPBX -->

<pbx>ADDR_GROUP_VPBX</pbx>
<groupMember>ADDR_GROUP_VPBX_MEMBER</groupMember>
<presenceGroup>ADDR_GROUP_PRESENCE</presenceGroup>
<monitorGroup>ADDR_GROUP_MONITOR</monitorGroup>
<messageGroup>ADDR_GROUP_MESSAGE</messageGroup>

<!-- Feature: AdminCenter Access -->

<addressAdmin>

  <username>ADDR_ADMIN_UN</username>
  <password>ADDR_ADMIN_PW</password>
  <language>ADDR_ADMIN_LANGUAGE</language>
  <email>ADDR_ADMIN_EMAIL</email>
</addressAdmin>
</address>

```

## "Address" SIP Address Main Parameter

Variable:	Format:	Range:	Default:	Description:	Version:
1 <account> <b>ADDR_ACC_NAME</b> </account>	String	max. 32 characters	Empty	<b>Mandatory configuration!</b>  Assigns the unambiguous name of the account to which the telephone number belongs	5.2
2 <number> <b>ADDR_NUMBER</b> </number>	Number	max. 50 characters	false	<b>Mandatory configuration!</b>  Assigns an unambiguous telephone number	5.2
3 <domain> <b>ADDR_DOMAIN</b> </domain>	String	max. 128 characters	Empty	IP address or FQDN of the Aarenet VoIP Switch.	5.2
4 <displayName> <b>ADDR_DISPLAY</b> </displayName>	String	max. 64 characters	Empty	Displayed name information at the called party side.	5.2

## "Address" SIP Address Registration Parameter

Variable:	Format:	Range:	Default:	Description:	Version:
1 <validAfter> <b>ADDR_VALID_AFTER</b> </validAfter>	String	Date/Time	Empty  or yyyy-MM-dd'T'HH:mm:ss	Date/time of the activation of the telephony number (SIP address)  Empty:  ◇ The number is active.  Address Valid From:  ◇ The number becomes active starting at Date/Time.	5.2
2 <validUntil> <b>ADDR_VALID_UNTIL</b>	String	Date/Time	Empty	Date/time of the <b>deactivation</b> of the telephony number (SIP	5.2

	</validUntil>		or yyyy-MM-dd'T'HH:mm:ss	address) Empty:  ◇ The number is active.  Address Valid Until:  ◇ The number becomes inactive starting at Date/Time.	
3	<portoutNumber> <b>ADDR_PORTOUT_NUMBER</b> </portoutNumber>	String	Empty Empty  or Outputping Prefix, max. 50 characters	Needed in Switzerland only!  When ADD_PORT_OUT_NUMBER is assigned and the number deactivated in ADD_VALID_UNTIL then the Aarenet VoIP Switch will redirect an incoming call toward this telephone number back into the PSTN.  Example:  ◇ Outported Number : 0123456789 ◇ NPRN new provider : 098000 ◇ Setting in ADD_PORT_OUT_N 98000 ◇ The rewriting result will be: 0980000123456789	5.2
4	<registersViaMainNumber> <b>ADDR_REG_VIA_MAIN</b> </registersViaMainNumber>	String	Selection: false  • true • false	Assigns that this telephone number is registered via the main number of this account.	5.2
5	<singleLocation> <b>ADDR_SINGLE_LOCATION</b> </singleLocation>	String	Selection: false  • true • false	Assigns that only one SIP CPE can register to this telephone number.	5.10
6	<balancedRouting> <b>ADDR_REG_BALANCED</b> </balancedRouting>	String	Selection: false  • true • false	Assigns that registering SIP CPEs can provide a balancing Q value directive.  The Aarenet VoIP Switch will routing incoming calls according the balancing directive toward the SIP CPEs.	5.2

## "Address" Number Attributes & Directives

	Variable:	Format:	Range:	Default:	Description:	Version:
1	<mainNumber> <b>ADDR_MAIN_NUMB</b> </mainNumber>	String	Selection:	false  • true • false	Assigns this telephone number as the main number of this account.  <b>Per account only one main number is allowed!</b>	5.2
2	<privateNumber> <b>ADDR_PRIVATE_NUMB</b> </privateNumber>	String	Selection:	false  • true	Assigns this telephone number as the internal telephone number of this vPBX.	5.2

3	<baseNumber> <b>ADDR_BASE_NUMB</b> </baseNumber>	String	Selection: false  • true • false	<p>This number is the base number of 5.2 this account. The base number serves as a search pattern to identify an open number space.</p> <p><b>Per account there can be only one base number!</b></p> <p>Example:</p> <p style="padding-left: 40px;">Base Number : 012345</p> <p style="padding-left: 40px;">Regexp: 012345.*</p> <p>Matches, e.g. the numbers:</p> <p style="padding-left: 40px;">012345 0 012345 100 012345 99999</p>	
4	<signalingOnly> <b>ADDR_SIGNAL_ONLY</b> </signalingOnly>	String	Selection: false  • true • false	Assigns that this telephone number can be used only for outgoing connections.	5.2
5	<preferredNumber> <b>ADDR_PREFERRED_NUMB</b> </preferredNumber>	String	Selection: false  • true • false	Assigns that this telephone number will always be used as CLIP for all outgoing calls from any telephone number of this account.	5.2
6	<disabled> <b>ADDR_DISABLED</b> </disabled>	String	Selection: false  • true • false	<p>Assigns that this telephone number is disabled for incoming and outgoing connections.</p> <p>This number cannot be created a second time on this Aarenet VoIP Switch. This feature can be used for the reservation of a telephone number.</p>	5.2
7	<blocked> <b>ADDR_BLOCKED</b> </blocked>	String	Selection: false  • true • false	<p>Assigns that this telephone number cannot be used for outgoing connections.</p> <p>Incoming connection to this telephone number are possible.</p>	5.2
8	<queueLen> <b>ADDR_QUEUE_LENGTH</b> </queueLen>	Number	Empty 0 or value >= 0	<p>Assigns how many concurrent incoming calls toward this internal vPBX telephone number can be offered at the same time.</p> <p>The calling sides receive the alerting tone.</p> <p>The call queue is used for presenting incoming calls by the monitor function (see below VPBX_MONITOR_GROUP).</p> <p>If this this feature is working depends also from the implementation on the called SIP device!</p>	5.2
9	<priorityCall> <b>ADDR_PRIORITY_CALL</b> </priorityCall>	String	Selection: false  • true • false	<p>Assigns that outgoing calls from this telephone number are handled with priority.</p> <p>In extreme cases the Aarenet VoIP Switch terminates existing connections for routing a priority call toward the PSTN.</p>	5.2

10	<endpointName> <b>ADDR_ENPOINT_NAME</b> </endpointName>	String		This parameter is not yet described in detail. Proposed procedure see section "Not Documented DAML Parameter"	6.2
11	<mgcpProfile> <b>ADDR_MGCP_PROFIL</b> </mgcpProfile>	String		This parameter is not yet described in detail. Proposed procedure see section "Not Documented DAML Parameter"	5.2
12	<msisdn> <b>ADDR_FMC_1</b> </msisdn>			<b>Do not use!</b>  This parameter is not yet described in detail. Proposed procedure see section "Not Documented DAML Parameter"	5.10
13	<msisdn2> <b>ADDR_FMC_2</b> </msisdn2>	String		<b>Do not use!</b>  This parameter is not yet described in detail. Proposed procedure see section "Not Documented DAML Parameter"	5.10

## "Address" Feature: Outgoing Number Presentation

Variable:	Format:	Range:	Default:	Description:	Version:
1 <showClip> <b>ADDR_CLIP_SHOW</b> </showClip>	String	Selection:	false	<p>These two parameters ADDR_CLIP_SHOW and ADDR_CLIP_HIDE determine whether and how the CLIP of the calling side is modified by the Aarenet VoIP Switch.</p> <p><b>ADD_SHOW_CLIP:</b> false <b>ADD_HIDE_CLIP:</b> false</p> <p>The CLIP will not be modified by the Aarenet VoIP Switch</p> <p><b>ADD_SHOW_CLIP:</b> true <b>ADD_HIDE_CLIP:</b> false</p> <p>The Aarenet VoIP Switch forces to display the CLIP.</p> <p><b>ADD_SHOW_CLIP:</b> false <b>ADD_HIDE_CLIP:</b> true</p> <p>The Aarenet VoIP Switch forces to hide the CLIP Calling Restriction CLIR</p> <p><b>ADD_SHOW_CLIP:</b> true <b>ADD_HIDE_CLIP:</b> true</p> <p>Invalid, the result is undefined!</p>	5.2
2 <hideClip> <b>ADDR_CLIP_HIDE</b> </hideClip>	String	Selection:	false	<p>See description of ADDR_CLIP_SHOW above.</p> <p>• true • false</p>	5.2
3 <publicClip> <b>ADDR_CLIP_PUBLIC</b> </publicClip>	Number	max. 50 characters	Empty	<p>Assigns this telephone number as CLIP of this internal vPBX telephone number for outgoing connections toward the PSTN. The assigned public number must be from the public number range of this vPBX.</p> <p>Note:</p>	5.4

- This parameter is valid only with private numbers.
- If no public number is configured as a public identity then no outgoing connections from this internal vPBX telephone number toward the PSTN is possible!

## "Address" Feature: VoiceMail Box

	Variable:	Format:	Range:	Default:	Description:	Version:
1	<messageBox> ... </messageBox>				XML container which defines the VoiceMail Box parameters that is associated with this telephone number.	5.2
2	<autoAuthentication> <b>ADDR_VM_PIN</b> </autoAuthentication>	Number	Empty or value >= 0		<b>Write only!</b>  Assigns the PIN to be used for the VoiceMail Box access.  Note:  It is recommended to use only digits, else the user will have problems with a legacy telephone keypad.	5.2
3	<autoAuthentication> <b>ADDR_VM_AUTO_AUTH</b> </autoAuthentication>	String	Selection:	false  • true • false	Assigns whether the PIN is needed when the access is coming from this telephone number.	5.2
4	<skipMessageMenu> <b>ADDR_VM_SKIP_MESSAGE</b> </skipMessageMenu>	String	Selection:	false  • true • false	Assigns that the main menu of the VoiceMail Box are recited.	5.2
5	<language> <b>ADDR_VM_LANGUAGE</b> </language>	String	Selection:	Depends on the address language ADDR_LANGUAGE  • de • en • fr • it	Assigns the language of the announcement texts of the VoiceMail Box.	5.2

de: German  
 en: English  
 fr: French  
 it: Italian

6	<signalNewMessage> <b>ADDR_VM_SIGNAL_NEW_MESSAGE</b> </signalNewMessage>	String	Selection: true <ul style="list-style-type: none"> <li>• true</li> <li>• false</li> </ul>	Assigns that a new recorded message is signaled by the message server of the Aarenet VoIP Switch to the SIP CPE. 5.2
7	<subscribedMwiOnly> <b>ADDR_VM_SIGNAL_MWI_ONLY</b> </subscribedMwiOnly>	String	Selection: true <ul style="list-style-type: none"> <li>• true</li> <li>• false</li> </ul>	Defines whether and how the telephone is informed about a new message in the VoiceMailBox. The format is ?Message Waiting Information MWI?.  true:  Explicit MWI Subscription only: MWI messages are sent to the telephone when it prior subscribed for the WMI service.  false:  Implicitly, all registered devices: A MWI message is automatically sent to all telephones registered to this address. The telephone must not log in with the WMI service.
8	<email> <b>ADDR_VM_EMAIL</b> </email>	String	Empty      Empty or Email Address,	Assigns the email address to which a VoiceMail message will 5.2

			max. 64 characters	be sent.	
9	<formatMp3> <b>ADDR_VM_AUDIO_FORMAT</b> </formatMp3>	String	Selection: false <ul style="list-style-type: none"><li>• true</li><li>• false</li></ul>	Assigns that the message audio file is MP3 formatted.  Note: The default is WAV PCM coded.	5.2
10	<blocked> <b>ADDR_VM_BLOCKED</b> </blocked>	String	Status: no <ul style="list-style-type: none"><li>• no</li><li>• Blocked Minutes</li></ul>	<b>Read Only!</b>  States, if the VoiceMail Box is blocked and how long it is blocked.  no:  If ?no? is returned then the VoiceMailBox is not blocked.  Blocked Minutes:  Remaining duration of the blocking in minutes	5.2
11	<faxOnly> <b>ADDR_VM_FAX_ONLY</b> </faxOnly>	String	Selection: false <ul style="list-style-type: none"><li>• true</li><li>• false</li></ul>	Assigns if this VoiceMail Box is enabled to receive Fax only.	5.7
12	<faxAutoDetect> <b>ADDR_VM_FAX_VOICE_DETECT</b> </faxAutoDetect>	String	Selection: false <ul style="list-style-type: none"><li>• true</li><li>• false</li></ul>	Assigns that this VoiceMail Box detects automatically if an incoming message is a voice message or a Fax.	5.7

## "Address" Feature: Call Forwarding

**Note** It is recommended not to use the call forward CF for vPBX call distributions. Use the AdminCenter feature "Distributions" for this purpose.

	Variable:	Format:	Range:	Default:	Description:	Version:
1	<cfu> <b>ADDR_CFU</b> </cfu>	Telephone Number	max. 50 characters	Empty	Assigns an "Call Forwarding Unconditional CFU" redirection telephone number for this telephone number.	5.2
2				Empty		5.2

	<cff> <b>ADDR_CFF</b> </cff>	Telephone Number	max. 50 characters		Assigns a "Call Forwarding Fallback CFF" redirection telephone number for this telephone number.	
3	<cfb> <b>ADDR_CFB</b> </cfb>	Telephone Number	max. 50 characters	Empty	Assigns a "Call Forwarding Busy CFB" redirection telephone number for this telephone number.	5.2
4	<cfnr> <b>ADDR_CFN</b> </cfnr>	Telephone Number	max. 50 characters	Empty	Assigns a "Call Forwarding Not Reachable CFNR" redirection telephone number for this telephone number.	5.2
5	<cfo> <b>ADDR_CFO</b> </cfo>	Telephone Number	max. 50 characters	Empty	Assigns an "Call Forking CFO" redirection telephone number for this telephone number.	5.2
6	<dnd> <b>ADDR_DND</b> </dnd>	String	Selection: false		Assigns "Do not Disturb DND" for this telephone number. Incoming calls are connected to a corresponding announcement.	5.2
7	<rrn> <b>ADDR_RRN</b> </rrn>	String	Selection: false		Assigns "Reject anonymous calls RRN" for this telephone number. Incoming calls are connected to a corresponding announcement.	5.2

## "Address" Feature: Diverse

	Variable:	Format:	Range:	Default:	Description:
1	<language> <b>ADDR_LANGUAGE</b> </language>	String	Selection:	Depends on the address language ADDR_LANGUAGE	Assigns the language of the announcement, e.g. do not disturb, used for this telephone number.  de: German en: English fr: French it: Italian
2	<callWaiting> <b>ADDR_MGCP_CALL_WAITING</b> </callWaiting>	String	Selection: false		Assigns for MGCP MTA if it is allowed to signal a new incoming call during a running call  false:  Incoming calls in busy state are not signaled.  true:  Incoming calls in busy state are signaled.
3	<callHold> <b>ADDR_MGCP_CALL_HOLD</b> </callHold>	String	Selection: false		Assigns for MGCP MTA if it is allowed to set the calling side on hold.  false:  Incoming calls cannot be set on hold.  true:  Incoming calls can be set on hold.
4	<noOfferOnBusy> <b>ADDR_CALL_NO_OFFER</b> </noOfferOnBusy>	String	Selection: false		Assigns if this telephone number is signaled a new incoming call during busy state.
5	<recordingEmail> <b>ADDR_CALL_RECORD_EMAIL</b> </recordingEmail>	String	Empty	Empty	Assigns the email address to which a recorded call will be sent

			or Email Address, max. 64 characters	Note:  The recording is started and stopped on a by call basis by the user due to pressing the record key or stimulus *#-procedure on its telephone keypad.
6	<autoRecord> <b>ADDR_CALL_RECORD_AUTOMATIC</b> </autoRecord>	String	Selection: false  • true • false	Assigns if all calls will be recorded automatically and sent to the assigned email address in ADDR_CALL_RECORD_EMAIL

## "Address" Feature: Group

**Note** Groups are an important feature for the creation of a vPBX and the presence services within a vPBX.

	Variable:	Format:	Range:	Default:	Description:	Version:
1	<pbx> <b>ADDR_GROUP_VPBX</b> </pbx>	String	max. 64 characters	none	Assigns to which vPBX this telephone number belongs.  <b>Note:</b>  • The vPBX group must be created already in the system of the VoIP Switch!	5.2
2	<groupMember> <b>ADDR_GROUP_VPBX_MEMBER</b> </groupMember>	String			Assigns from which other groups this telephone number may refer additional authorizations.  A telephone number can be member of n groups.  <b>Note:</b>  • The groups must be created already in the system of the VoIP Switch!	5.2
3	<presenceGroup> <b>ADDR_GROUP_PRESENCE</b> </presenceGroup>	String	max. 64 characters	none	Assigns the group whose members are allowed to subscribe for the Presence service of this telephone number.  <b>Note:</b>  • The group must be created already in the system of the VoIP Switch! • Presence information are visible in this group and related superior groups	5.2
4	<monitorGroup> <b>ADDR_GROUP_MONITOR</b> </monitorGroup>	String	max. 64 characters	none	Assigns the group whose members are allowed to subscribe for the Monitor service of this telephone	5.2

number.

**Note:**

- The group must be created already in the system of the VoIP Switch!
- Monitoring information are visible in this group and related superior groups

<code>&lt;messageGroup&gt;   <b>ADDR_GROUP_MESSAGE</b> &lt;/messageGroup&gt;</code>	String	max. 64 characters	none	Assigns the group whose members are allowed to subscribe for the Message service of this telephone number.	5.2
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5

**Note:**

- The group must be created already in the system of the VoIP Switch!
- Message information are visible in this group and related superior groups

## "Address" Feature: AdminCenter Access

	Variable:	Format:	Range:	Default:	Description:	Version:
1	<code>&lt;addressAdmin&gt;   ... &lt;/addressAdmin&gt;</code>	String			This parameter is not yet described in detail. Proposed procedure see section "Not Documented DAML Parameter"	5.2
2	<code>&lt;username&gt;   <b>ADDR_ADMIN_UN</b> &lt;/username&gt;</code>	String			This parameter is not yet described in detail. Proposed procedure see section "Not Documented DAML Parameter"	5.2
3	<code>&lt;password&gt;   <b>ADDR_ADMIN_PW</b> &lt;/password&gt;</code>	String			This parameter is not yet described in detail. Proposed procedure see section "Not Documented DAML Parameter"	5.2
4	<code>&lt;language&gt;   <b>ADDR_ADMIN_LANGUAGE</b> &lt;/language&gt;</code>	String			This parameter is not yet described in detail. Proposed procedure see section "Not Documented DAML Parameter"	5.2
5	<code>&lt;email&gt;   <b>ADDR_ADMIN_EMAIL</b> &lt;/email&gt;</code>	String		Empty	This parameter is not yet described in detail. Proposed procedure see section "Not Documented DAML Parameter"	5.2

## DAML-Query

## DAML-Query: "List of All Account Names"

This Query requests the names of all accounts which are configured in this Aarenet VoIP Switch.

The CRM must transfer a HTTP GET with the following parameters:

`query=account`

◇ Query directive to request all account names

### DAML-Query Example:

```
https://<IP_ADDRESS>:8447/dataaccesscenter/daml?query=accounts
```

### DAML-Response Example:

```
<daml status="ok">
  <account>an-acc-0020</account>
  <account>an-acc-0021</account>
  <account>an-acc-0022</account>
  <account>an-acc-0023</account>
</daml>
```

## DAML-Query: "List of the n Last Connections of a Telephone Number"

This query requests a list of the last n connections and connection attempts of a phone number. This DAML query delivers the raw data of a connection. It is the job of the CRM application to transform these data into the desired form and representation.

### Warning

Limit the requested number of entries as it blocks the database during the query execution!  
This can cause alarming messages from the Aarenet VoIP Switch monitoring.

The CRM must transfer a HTTP GET with the following parameters:

`query=calls`

◇ Query directive to request the last connections and connection attempts of a telephone number

`account=QUERY_ACCOUNT`

◇ Unambiguous name of an account

`number=QUERY_NUMBER`

◇ Unambiguous telephone number or SIP address

`entries=QUERY_ENTRY`

◇ Number of the requested connections and connection attempts

### DAML-Query Example:

```
https://<IP_ADDRESS>:8447/dataaccesscenter/daml?query=calls&account=an-acc-0021&number=01234567890&ent
```

### DAML-Response:

```

<daml status="ok">
  <call>
    <time>CALL_START</time>
    <duration>CALL_DURATION</duration>
    <direction>CALL_DIRECTION</direction>
    <number>CALL_PEER_NUMBER</number>
    <charge>CALL_CHARGE</charge>
  </call>
  . . .
</daml>

```

### DAML-Response Example:

```

<daml status="ok">
  <call>
    <time>2013-05-24T14:55:13</time>
    <duration>12527</duration>
    <direction>out</direction>
    <number>0987654321</number>
    <charge>0.16</charge>
  </call>
  <call>
    <time>2013-05-24T10:20:38</time>
    <duration>0</duration>
    <direction>in</direction>
    <number>0987654321</number>
  </call>
</daml>

```

### Parameters:

	Variable:	Format:	Range:	Default:	Description:	Version:
1	<call> ... </call>	none	none	none	Container which holds the call details	5.2
2	<time> <b>CALL_START</b> </time>	yyyy-MM-dd'T'HH:mm:ss	none	none	Date/time of the call?s start	5.2
3	<duration> <b>CALL_DURATION</b> </duration>	yyyy-MM-dd'T'HH:mm:ss	>=0	none	Duration of the connection in milliseconds.	5.2
4	<direction> <b>CALL_DIRECTION</b> </direction>	String	Selection: in out	none	Indicates whether it is an incoming or outgoing connection.  in:  Incoming connection  out:  Outgoing connection	5.2
5	<number> <b>CALL_PEER_NUMBER</b> </number>	String	Telephone Number	none	Shows the telephone number of the other participant of the connection.  The meaning depends on the <b>CALL_DIRECTION</b> : in:	5.2

					At incoming connections this is the number of the calling side (CLIP)	
				out:	At Outgoing connection this is the dialed number	
6	<charge> <b>CALL_CHARGE</b> </charge>	String	>= 0.00	none	Charge of an outgoing connection	5.2

## DAML-Query: "List of all Ruleset Names"

This Query requests the names of all ruleset which are configured in this Aarenet VoIP Switch.

The CRM must transfer a HTTP GET with the following parameters:

`query=rulesets`

◇ Query directive to request all configured ruleset names

### DAML-Query Example:

`https://<IP_ADDRESS>:8447/dataaccesscenter/daml?query=rulesets`

### DAML-Response Example:

```
<daml status="ok">
  <ruleset>Route: Subscriber</ruleset>
  <ruleset>Signal: 2 Digit Signaling</ruleset>
  <ruleset>Signal: 3 Digit Signaling</ruleset>
  <ruleset>Block: International Calls</ruleset>
  <ruleset>Block: Satellite Calls</ruleset>
  <ruleset>Block: Block All Except Emergency Calls</ruleset>
</daml>
```

## DAML-Query: "List of all Emergency Locations"

This Query requests the names of all emergency locations which are configured in this Aarenet VoIP Switch.

The CRM must transfer a HTTP GET with the following parameters:

`query=emergencyLocations`

◇ Query directive to request all configured emergency locations

### DAML-Query Example:

`https://<IP_ADDRESS>:8447/dataaccesscenter/daml?query=emergencyLocations`

## DAML-Response Example:

```
<daml status="ok">
  <emergencyLocation>GN0001 Aeugst am Albis</emergencyLocation>
  <emergencyLocation>GN0002 Affoltern am Albis</emergencyLocation>
  <emergencyLocation>GN0003 Bonstetten</emergencyLocation>
</daml>
```

## DAML-Query: "List of All Announcement Names of a Telephone Number"

This query requests the names of all announcement names of a telephone number.

The CRM must transfer a HTTP GET with the following parameters:

**query=announcements**

◇ Query directive to request all announcement names of a telephone number.

**account=QUERY\_ACCOUNT**

◇ Unambiguous name of an account

**number=QUERY\_NUMBER**

◇ Unambiguous telephone number or SIP address

## DAML-Query Example:

```
https://<IP_ADDRESS>:8447/dataaccesscenter/daml?query=announcements&account=an-acc-0021&number=01234
```

## DAML-Response:

```
<daml status="ok">
  <message>
    <id>ANNOUNCEMENT_ID</id>
    <duration>ANNOUNCEMENT_DURATION</duration>
    <name>ANNOUNCEMENT_NAME</name>
  </message>
  . . .
</daml>
```

## DAML-Response Example:

```
<daml status="ok">
  <message>
    <id>179</id>
    <name>Office Time</name>
    <duration>16325</duration>
  </message>
  <message>
    <id>180</id>
    <name>Weekend</name>
    <duration>253346</duration>
  </message>
</daml>
```

## Parameters:

	Variable:	Format:	Range:	Default:	Description:	Version:
1	<message> ... </message>	none	none	none	Container which holds the announcement parameters	5.2
2	<id> <b>ANNOUNCEMENT_ID</b> </id>	Number	>=0	none	Unambiguous identification of the announcement	5.2
3	<name> <b>ANNOUNCEMENT_NAME</b> </name>	String		none	Name of the announcement	5.2
4	<duration> <b>ANNOUNCEMENT_DURATION</b> </duration>	Number	>=0, in milliseconds	none	Duration of the announcement	5.2

## DAML-Query: "List of all VoiceMail Messages of a Telephone Number"

This query requests the identifications of all messages of a telephone number's VoiceMail box.

The CRM must transfer a HTTP GET with the following parameters:

`query=voiceMessages`

◇ Query directive to request all message information of a telephone number's VoiceMail Box.

`account=QUERY_ACCOUNT`

◇ Unambiguous name of an account

`number=QUERY_NUMBER`

◇ Unambiguous telephone number or SIP address

### DAML-Query Example:

```
https://<IP_ADDRESS>:8447/dataaccesscenter/daml?query=voiceMessages&account=an-acc-0021&number=012345
```

### DAML-Response:

```
<daml status="ok">
  <message>
    <id>MESSAGE_ID</id>
    <name>MESSAGE_NAME</name>
    <number>MESSAGE_NUMBER</number>
    <timeStart>MESSAGE_DATE_TIME</timeStart>
    <timePlayed>MESSAGE_PLAYED</timePlayed>
    <duration>MESSAGE_DURATION</duration>
    <saved>MESSAGE_SAVED</saved>
  </message>
  . . .
</daml>
```

### DAML-Response Example:

```
<daml status="ok">
```

```

<message>
  <id>167</id>
  <name>Dani</name>
  <number>0987654321</number>
  <timeStart>2016-01-14T10:29:00</timeStart>
  <timePlayed>never</timePlayed>
  <duration>35563</duration>
  <saved>>false</saved>
</message>
<message>
  <id>786</id>
  <name></name>
  <number>0283746551</number>
  <timeStart>2016-01-20T16:12:54</timeStart>
  <timePlayed>never</timePlayed>
  <duration>13876</duration>
  <saved>>false</saved>
</message>
</daml>

```

### Parameters:

	Variable:	Format:	Range:	Default:	Description:	Version:
1	<message> ... </message>	none	none	none	Container which holds the message parameters	5.2
2	<id> <b>MESSAGE_ID</b> </id>	Number	>=0	none	Unambiguous identification of the message	5.2
3	<name> <b>MESSAGE_NAME</b> </name>	String		none	Name in the <Display> part of the SIP-Header "From:"	5.2
4	<number> <b>MESSAGE_NUMBER</b> </number>	Number	>=0	none	Telephony number of the calling side.	5.2
5	<timeStart> <b>MESSAGE_DATE_TIME</b> </timeStart>	yyyy-MM-dd'T'HH:mm:ss		none	Date/time of the recording of the message	5.2
6	<timePlayed> <b>MESSAGE_PLAYED</b> </timePlayed>	String	Selection:  never yyyy-MM-dd'T'HH:mm:ss	none	Date/time, when the message was played the last time.  never:  The message was never played.	5.2
7	<timeStart> <b>MESSAGE_DATE_TIME</b> </timeStart>	yyyy-MM-dd'T'HH:mm:ss		none	Date/time of the recording of the message	5.2
8	<duration> <b>MESSAGE_DURATION</b> </duration>	Number	>=0, in milliseconds	none	Duration of the message	5.2
9	<saved> <b>MESSAGE_SAVED</b> </saved>	String	Selection:  true false	none	Indicates whether the message was marked by the user for a longer retention	5.2

# DAML-Document Examples

## Create a "Residential Account" with 1 Public Number

### Requirement:

- ◇ Account for private customer with one telephone number
- ◇ Customer public number 0987654321
- ◇ Account TopStop with 50.00, warning at 70%, email to user@home.com
- ◇ Block calls toward 09\* numbers
- ◇ VoiceMail Box active with email to user@home.com
- ◇ CFF to telephone number 0123456789

See also: "Download DAML Test Scripts for a Residential User"

```
<daml command="write">
<!-- Define the Residential Account -->
    <account>
        <accountName>RESIDENTIAL_DAML</accountName>
        <info>Residential Test Account</info>
        <password>lgRP9vBe</password>
        <username>5umWIuce</username>
        <validAfter>2016-01-01 00:00:00</validAfter>
        <validUntil/>
        <tenant>DAML_Tenant</tenant>
        <routingTable>Routing_to_PSTN</routingTable>
        <pricelist>Price_DAML_SUBSCRIBER</pricelist>
        <emergencyLocation>Default_Location</emergencyLocation>
        <sysAccountTopStop>
            <type>SYS</type>
            <monthlyReset>true</monthlyReset>
            <valueMax>50.0</valueMax>
            <alarmLevel>0.7</alarmLevel>
            <alarmEmail>user@home.com</alarmEmail>
        </sysAccountTopStop>
        <ruleset>Subscriber</ruleset>
        <ruleset>Block_09*</ruleset>
    </account>

<!-- Define Residential Telephone Number -->
    <address>
        <account>RESIDENTIAL_DAML</account>
        <number>0987654321</number>
        <language>de</language>
        <disabled>>false</disabled>
        <validAfter>2016-01-01 00:00:00</validAfter>
        <validUntil/>
        <portoutNumber/>
        <messageBox>
            <language>de</language>
            <email>user@home.com</email>
            <signalNewMessage>true</signalNewMessage>
            <skipMessageMenu>>false</skipMessageMenu>
            <autoAuthentication>>false</autoAuthentication>
            <subscribedMwiOnly>true</subscribedMwiOnly>
            <faxOnly>>false</faxOnly>
            <faxAutoDetect>>false</faxAutoDetect>
            <formatMp3>>false</formatMp3>
        </messageBox>
        <cff>0123456789</cff>
    </address>
</daml>
```

# Create a "SIP Trunk" Account with 100 Public Numbers for ISDN PBX behind SIP CPE

## Requirement:

- ◇ SIP Trunk Account for a customer with an ISDN PBX connected to SIP CPE
- ◇ 100 public telephone number block 0555555550 ? 99
- ◇ The main telephone number is 0555555550, the other telephone numbers are registered via main number
- ◇ Account TopStop with 2000.00, warning at 70%, email to info@customer.com
- ◇ Block calls toward 09\* numbers
- ◇ CFF to mobile number 03333333
- ◇ Signaling 3 digit 500 ? 599 toward the SIP CPE/PBX
- ◇ No VoiceMail Boxes

See also: "Download DAML Test Scripts for a SIP Trunk"

```
<daml command="write">
<!-- Define the SIP Trunk Account -->

  <account>

    <accountName>SIP_TRUNK_DAML</accountName>
    <info>SIP Trunk Test Account</info>
    <password>1j3RRw3r</password>
    <username>MQa0b3eM</username>
    <validAfter>2016-01-01 00:00:00</validAfter>
    <validUntil/>
    <tenant>DAML_Tenant</tenant>
    <routingTable>Routing_to_PSTN</routingTable>
    <pricelist>Price_DAML_SUBSCRIBER</pricelist>
    <emergencyLocation>Default_Location</emergencyLocation>
    <sysAccountTopStop>
      <type>SYS</type>
      <monthlyReset>true</monthlyReset>
      <valueMax>2000.00</valueMax>
      <alarmLevel>0.7</alarmLevel>
      <alarmEmail>info@customer.com</alarmEmail>
    </sysAccountTopStop>
    <ruleset>Subscriber</ruleset>
    <ruleset>Block_09*</ruleset>
    <ruleset>Signaling: 3 Digit</ruleset>
  </account>

<!-- Define CFF -->

  <callForward>

    <name>CFF_03333333</name>
    <type>CFF</type>
    <destReplace>03333333</destReplace>
    <priority>10</priority>
  </callForward>

<!-- Define SIP Trunk Main Telephone Number -->

  <address>

    <account>SIP_TRUNK_DAML</account>
    <number>0555555550</number>
    <language>de</language>
    <disabled>>false</disabled>
    <validAfter>2016-01-01 00:00:00</validAfter>
    <validUntil/>
    <portoutNumber/>
    <mainNumber>true</mainNumber>
    <registersViaMainNumber>>false</registersViaMainNumber>
  </address>

<!-- Define the other SIP Trunk Telephone Numbers -->

  <address>
```

```

        <account>SIP_TRUNK_DAML</account>
        <number>0555555551</number>
        <language>de</language>
        <disabled>>false</disabled>
        <validAfter>2016-01-01 00:00:00</validAfter>
        <validUntil/>
        <portoutNumber/>
        <mainNumber>>false</mainNumber>
        <registersViaMainNumber>>true</registersViaMainNumber>
    </address>
    <address>
        <account>SIP_TRUNK_DAML</account>
        <number>0555555552</number>
        <language>de</language>
        <disabled>>false</disabled>
        <validAfter>2016-01-01 00:00:00</validAfter>
        <validUntil/>
        <portoutNumber/>
        <mainNumber>>false</mainNumber>
        <registersViaMainNumber>>true</registersViaMainNumber>
    </address>

<!-- ... -->

</daml>

```

## Create a vPBX Account with 5 Public Numbers

### Requirement:

- ◇ Account for vPBX
- ◇ 3 public telephone numbers 0123456787 ? 89
- ◇ vPBX requirement:
  - Access for vPBX administrator
  - Max. 8 channels
  - Max. 10 internal telephone numbers
  - Max. 5 App "an IP-Phone"
- ◇ Account TopStop with 150.00, warning at 70%, email to info@customer.com
- ◇ Block calls toward 09\* numbers

See also: "Download DAML Test Scripts for a vPBX"

```

<daml command="write">
<!-- Define the vPBX -->

    <group>

        <name>VPBX_DAML</name>
        <parent>DAML_Tenant</parent>
        <tenant>DAML_Tenant</tenant>
        <pbx>>true</pbx>
    </group>

<!-- Define the vPBX Administrator -->

    <admin>

        <username>VPBX_DAML_admin</username>
        <language>en</language>
        <password>E4igy5f!</password>
        <tenant>DAML_Tenant</tenant>
        <role>PBX</role>
        <pbx>VPBX_DAML</pbx>
    </admin>

<!-- Define the vPBX Attributes -->

    <groupAttribute>

```

```

    <group>VPBX_DAML</group>
    <name>maxPrivateAddr</name>
    <value>10</value>
  </groupAttribute>
  <groupAttribute>
    <group>VPBX_DAML</group>
    <name>maxDevAnIpPhone</name>
    <value>5</value>
  </groupAttribute>
  <groupAttribute>
    <group>VPBX_DAML</group>
    <name>channels</name>
    <value>8</value>
  </groupAttribute>

```

<!-- Define the vPBX Account -->

```

  <account>

    <accountName>VPBX_DAML</accountName>
    <info>vPBX Test Account </info>
    <password>a27fKuwer</password>
    <username>4wku4sPE8r</username>
    <validAfter>2016-01-01 00:00:00</validAfter>
    <validUntil/>
    <tenant>DAML_Tenant</tenant>
    <routingTable>Routing_to_PSTN</routingTable>
    <pricelist>Price_DAML_Tenant</pricelist>
    <emergencyLocation>Default_Location</emergencyLocation>
    <sysAccountTopStop>
      <type>SYS</type>
      <monthlyReset>true</monthlyReset>
      <valueMax>150.00</valueMax>
      <alarmLevel>0.7</alarmLevel>
      <alarmEmail>info@customer.com</alarmEmail>
    </sysAccountTopStop>
    <ruleset>Subscriber</ruleset>
    <ruleset>Block 09*</ruleset>
  </account>

```

<!-- Define the vPBX Public Telephone Numbers -->

```

  <address>

    <number>0123456787</number>
    <account>VPBX_DAML</account>
    <language>en</language>
    <disabled>>false</disabled>
    <validAfter>2016-01-01 00:00:00</validAfter>
    <validUntil/>
    <portoutNumber/>
    <pbx>VPBX_DAML</pbx>
    <presenceGroup>VPBX_DAML</presenceGroup>
    <monitorGroup>VPBX_DAML</monitorGroup>
    <messageGroup>VPBX_DAML</messageGroup>
    <groupMember>VPBX_DAML</groupMember>
    <groupMember>DAML_Tenant</groupMember>
  </address>
  <address>
    <number>0123456788</number>
    <account>VPBX_DAML</account>
    <language>en</language>
    <disabled>>false</disabled>
    <validAfter>2016-01-01 00:00:00</validAfter>
    <validUntil/>
    <portoutNumber/>
    <pbx>VPBX_DAML</pbx>
    <presenceGroup>VPBX_DAML</presenceGroup>
    <monitorGroup>VPBX_DAML</monitorGroup>
    <messageGroup>VPBX_DAML</messageGroup>
    <groupMember>VPBX_DAML</groupMember>
    <groupMember>DAML_Tenant</groupMember>
  </address>
  <address>
    <number>0123456789</number>
    <account>VPBX_DAML</account>
    <language>en</language>
    <disabled>>false</disabled>
    <validAfter>2016-01-01 00:00:00</validAfter>
    <validUntil/>
    <portoutNumber/>
    <pbx>VPBX_DAML</pbx>
    <presenceGroup>VPBX_DAML</presenceGroup>
    <monitorGroup>VPBX_DAML</monitorGroup>
    <messageGroup>VPBX_DAML</messageGroup>
    <groupMember>VPBX_DAML</groupMember>
    <groupMember>DAML_Tenant</groupMember>
  </address>

```

</daml>

Transclusion : Article End -----@@@@