A MITEL
PRODUCT
GUIDE

Setup “Branch on data” call flows within the Contact Center

How To Tutorial

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Mitel
Powering connections

Definitions

HowTo

A HowTo describes the configuration of a feature within the administration of the system. It addresses primarily trained administrators.

Tutorial

Within the tutorials procedures for installation, administration and operation of specific devices, applications or 3rd party systems, which are connected to the system, are described. The tutorial addresses primarily trained administrators.

Description

A description shows the implementation of interfaces, protocols and APIs or the interworking of specific components of OpenScape Business

Disclaimer

The information provided in this document contains merely general descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract. Availability and technical specifications are subject to change without notice.

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1. Overview

From OpenScape Business V2R2 on the CCV element „Branch on Data“ is available for voice call routing within the UC Suite contact center.

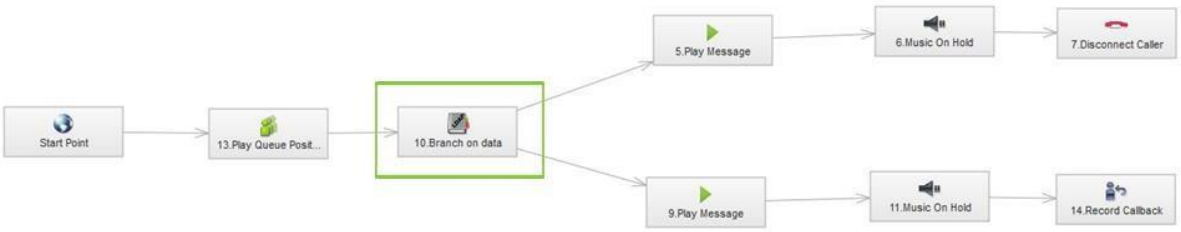

Figure 1 CCV element „Branch on Data

The „Branch on data“ element makes a routing decision based on a criterion which is retrieved from an external database via a LDAP query.

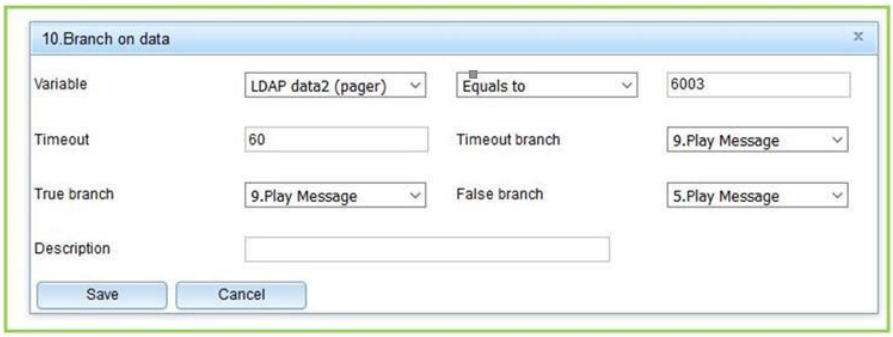

Figure 2 Properties of the CCV element „ Branch of Data „

Within the properties of the element the following parameters have to be specified.

Variable:	This is the variable taken from the UC Suite LDAP schema, which is used for the comparison Two LDAP fields can be chosen alternatively: XMPP Pager
Logical comparison:	This is the Boolean expression which is used for the comparison following options are available: Less than Larger than Equal or less than Equal or larger than Equals to
Value:	Represents the value which is tested against the content of the variable. The value has to be numerical within a range of -32xxx to + 32xxxx

Timeout:	A Timeout in seconds can be configures in case that the database has not responded to the query.
Timeout branch:	This indicates the subsequent ccv element, which is used in case that the query was not answered within the configured time.
True branch:	This ccv element is executed next in case that the comparison of the configured value with the content of the variable delivers “true”.
False branch:	This ccv element is executed next in case that the comparison of the configured value with the content of the variable delivers “false”.
Description:	A short description can be entered here optionally in order to identify the purpose of the comparison etc.

Table 1 Meaning of the parameters within the properties dialog

2. Functionality

The “Branch on data” element performs a LDAP query to all directories, which are configured within UC Suite Server à external providersà LDAP at the time when the ccv element is executed.

Within the UC Suite only LDAP directories should be configured, which contains the required data. It is recommended to use only one directory. Use of several directories could slow down the response time.

It has to be avoided to configure directories, which cannot be accessed permanently. Doing so slows down response time.

Note: The Contact Center caller identification is executed at the moment when a call enters first time the contact center. It can deliver and display other search results as the branch on data ccv element as it uses the first match of all available data sources, such as personal, internal, external and optional LDAP directory.

It is recommended to keep the data within the several directories consistent in order to get consistency between myAgent display information and the Branch on data test results.

2.1. Search criterion

The LDAP search criterion is the Caller Number (CLIP). The search is carried out within all phone number fields of the LDAP schema.

Note: Call numbers should be stored in international or canonical notation within the LDAP directory in order to get fast and reliable responses.

2.2. Search Results

In case of multiple matches only the first match is considered.

Note: All subsequent matches are discarded.

2.3. Comparison

The “Branch on data” element compares either the content of the “XMPP” or “Pager” field, using the configured Boolean expression. The comparison is done on base of the data type integer. Other data types like char, varchar etc. are converted into integer format before the comparison.

Note: Only numerical values in the range of −-32.768 to 32.767 can be used for the comparison. The LDAP fields “XMPP” or “Pager” must also contain numerical values otherwise the comparison fails.

Variable	Boolean expression	Value	Result
5	equal to	5	true
128	greater than	127	true
Hello	equal to	Hello	false

Table 2 Comparison examples

UC Suite LDAP Schema

Depending on the LDAP directory / database it could be necessary to adapt the UC Suite default LDAP field mapping to the LDAP schema of the LDAP server.

Within the following chapters an example in combination with the embedded Open Directory Service (ODS) is shown.

3. Configuration example

In this example a customer specific routing depending on the “Bonus” information within the database has to be realized. The data are stored within an external PostgreSQL database server.

The PostgeSQL database is connected to the embedded Open Directory Service (ODS), which is used as LDAP data source for the UC Suite. The LDAP field “XMPP ID” is used for the comparison within the “Branch on data” element.

Within the following description the general configuration of the UC Suite Contact Center, Open Directory Service, PostgreSQL server access and the LDAP mapping are considered. It is assumed that:

Required data are stored within a PostgreSQL database server

UC-Suite and the ODS run on the same UC Booster Server.

All servers are located within a LAN environment

Following steps are required to connect the database with the “Branch on data“ element.

Determine database schema within the Postgres server.

Configure the Postgres Database Server for access by ODS

Configure the ODS connector and assign PostgreSQL database fields to the ODS LDAP schema

Check the database connection and data

Configure ODS as external LDAP provider within the UC-Suite 6.) Configure the schedules and CCV with the Branch on data element

Check if call flow works as required.

Subsequent information are required for a successful configuration.

PostgreSQL Server	Address information	IP Address Port:	172.30.240.12 5432
	Account:	User: Password:	Odsaccess readonly
	Database	Name Table	Customer contacts
OpenDirectory Server (ODS)	Address information	IP Address Port:	172.30.242.5 389
	Account	User Password	uid=ldap,dc=web BODtest!

Table 3 Mandatory parameters for connection

Note:

The shown values are examples derived from the test environment. The parameters have be adapted according to the customer environment.

3.1. Determine the Database Schema

With a PostgreSQL database the information are stored within tables. Tables can be linked together by using so called Primary / secondary keys. For the “Branch on data” element a database table or a “specific view to several tables” is required, which contains at least the phone numbers and the required criterion of a contact.

In this example the Postgres SQL Server provides the required data within:

Database Customer Table contacts.

Table 4 Example of a Postgres S

	contactid [PK] integer	title character varying(30)	company character varying(50)	lastname character varying(30)	firstname character varying(30)	email character varying(50)	fonhome character varying(30)	fonbusiness character varying(30)	fonmobile character varying(30)	bonus character varying(10)	vip character varying(10)
1	1			Mustermann	Max			08970077720		6000	7003
2	2			Witzig	Willi			08970073269		6002	7000
3	3	Mr	External Postgre database	Testuser	ODS		0234256754	+49123456743	01706340803	6003	6590
*											

QL database table

Within this table the external phone number and the bonus information of a contact are stored beneath other data. A search by phone number within this table delivers the required “Bonus” information for the “Branch on data” element.

3.2. Postgres Server configuration

The PostgreSQL server administrator has to grant access to the database out of the ODS. Therefore:

Remote access from the UC Booster on which the ODS runs has to be granted by the PostgreSQL server. (listener port and allowed host)

A read only account for ODS access to the appropriate table(s) has to be created within the PostgreSQL server.

3.3. ODS configuration

Within the ODS setup the general access of the LDAP server and the access to the external Postgres database have to be configured. A SQL database connector license is required within OpenScape Business as a prerequisite.

3.3.1. LDAP access configuration within the Basic setting

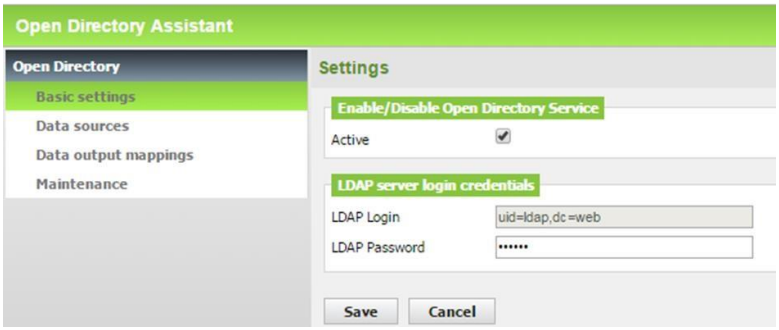

Figure 3 ODS LDAP access settings

A tic within the checkbox “Active” enables the LDAP Server with the default port 389.
LDAP login: uid=ldap,dc=web (cannot be changed)
LDAP password: BODtest! (choose always a strong individual password)
The PostgreSQL server access is configured within the Data sources configuration dialog

3.3.2. Data Sources configuration

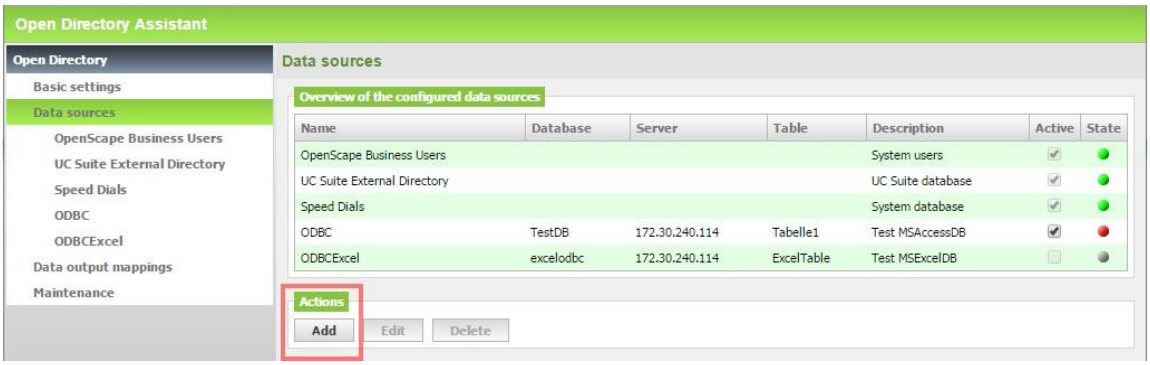

Figure 4 ODS Data source configuration overview

A click to “Add” opens the window for the configuration of a new database connection

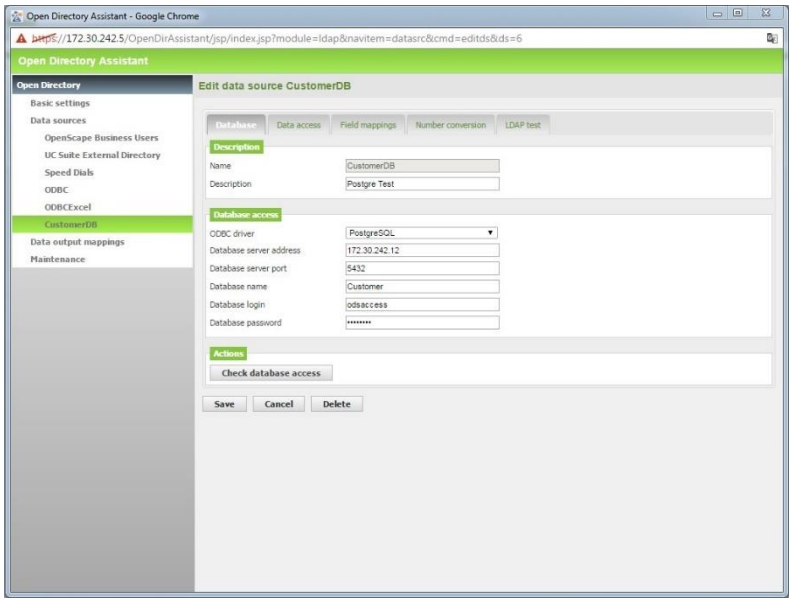

Figure 5 ODS Data source Server configuration

The access and login data which have been provided by the PostgeSQL server administrator have to be entered here.

A click to the “Check“ button allows a first test of the database connection. In case that connection fails all entered parameters have to be checked. In addition a “ping” to the server within the network can also be used to check, if the PostgreSQL server can be accessed in general.

3.3.3. Data access

Within the next steps the database table which contains the customer data can be selected. A preview of the data is granted, when clicking the “Preview” button.

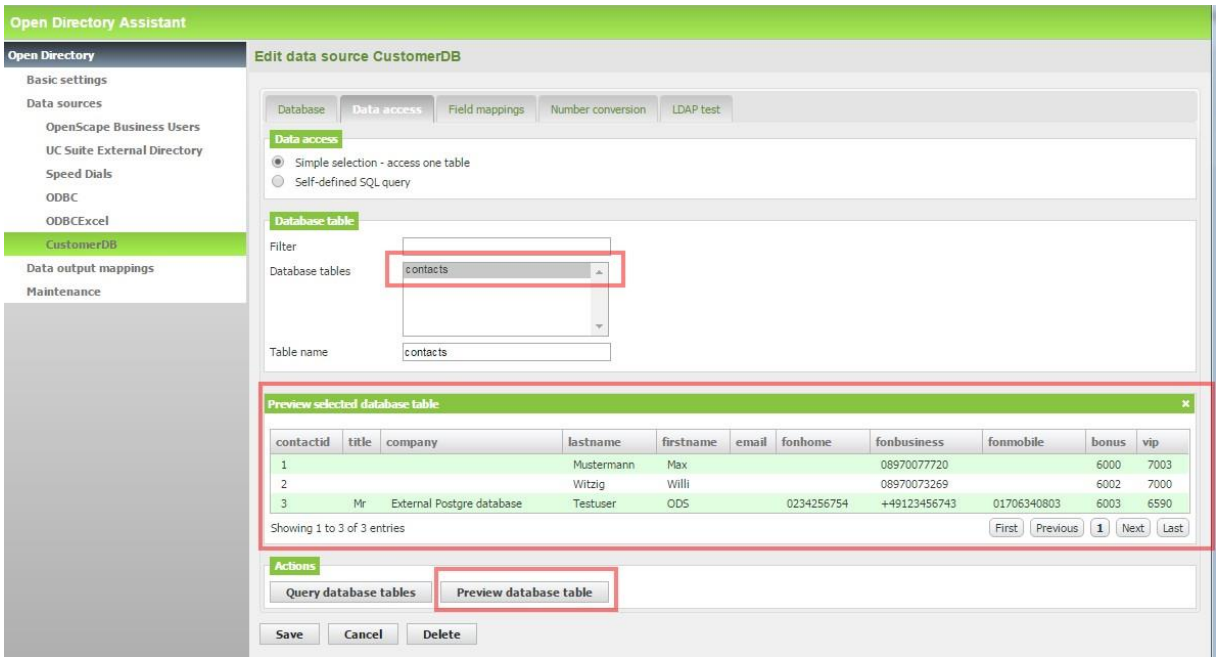

Figure 6 ODS Data source Server configuration

Check if the data which are used as criterion are available in the table. In this example the data within the column “Bonus” are used.

3.3.4. Field mapping

The Bonus field of the SQL database table has to be mapped to the ODS field XMPP under the tab “Field mapping”. In addition the fields which contain phone numbers have to be mapped also, otherwise the search by phone number fails.

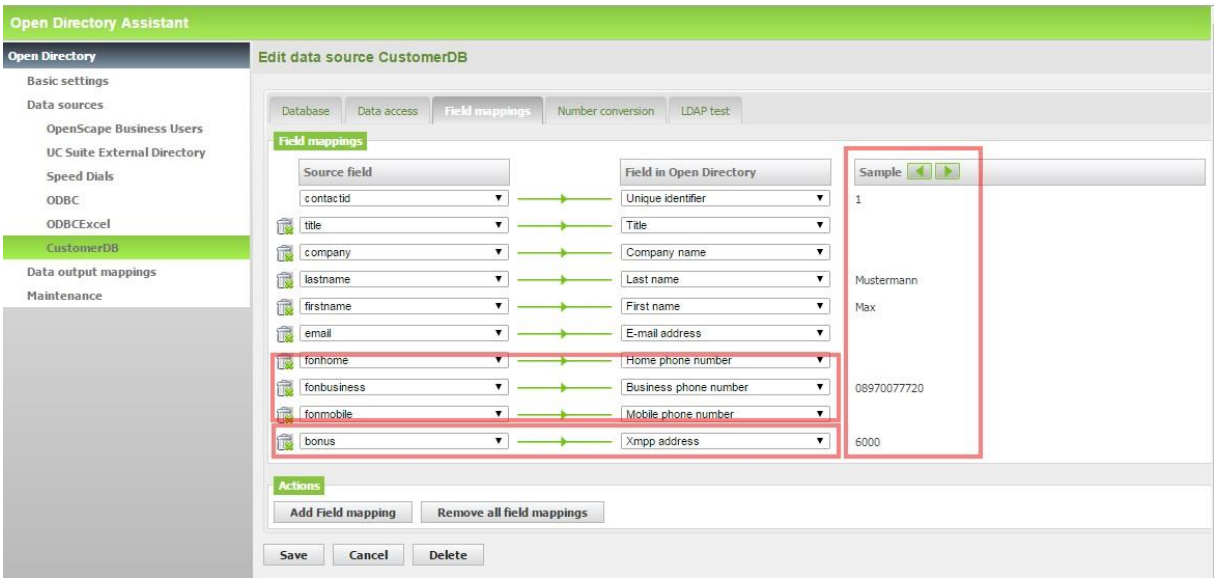

Figure 7 Source to ODS field mapping

Within the field mapping dialog the correct assignment can be checked using the sample function. The data source entries are shown by clicking the arrow buttons. Check that the required data are available in the appropriate format and that they are assigned correctly.

After field mapping the ODS has to be restarted before the ODS LDAP output can be checked in a last step.

3.3.5. LDAP test

A list with the first 50 entries retrieved via LDAP query is shown by clicking “Run test” under the “LDAP test” tab.

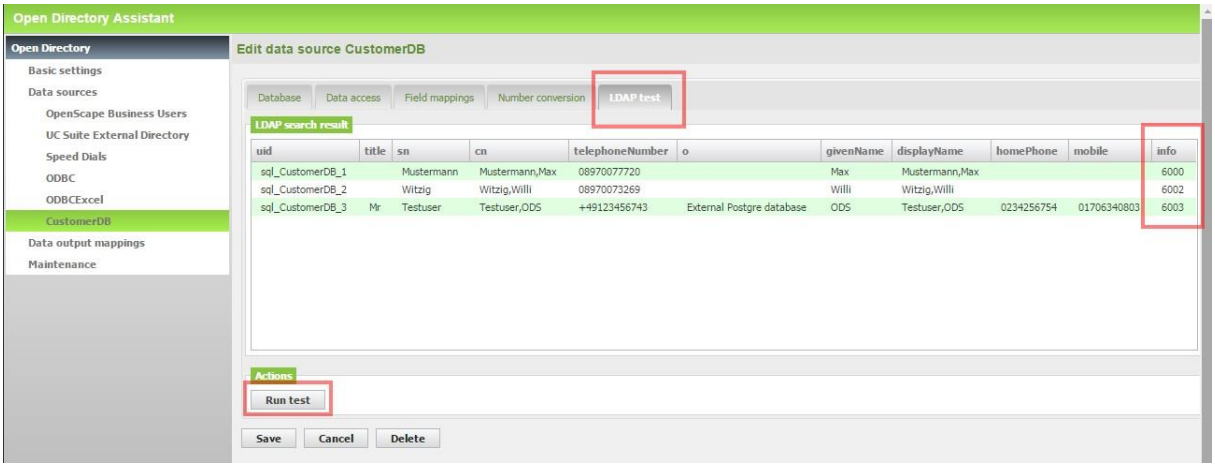

Figure 8 Test of the LDAP output

Check that the field assignment and data format within the LDAP output are correct.

Note:

Within the header row of the table the field names of the LDAP schema are used. The naming of the LDAP fields is different from the naming of the previously assigned ODS source fields. In this example the XMPP address field is named “info” in LDAP schema.

The “Number conversion” function of the ODS can be used to normalize phone numbers into canonical format for LDAP output in case that the phone numbers are not stored in international or canonical format within the PostgreSQL database.

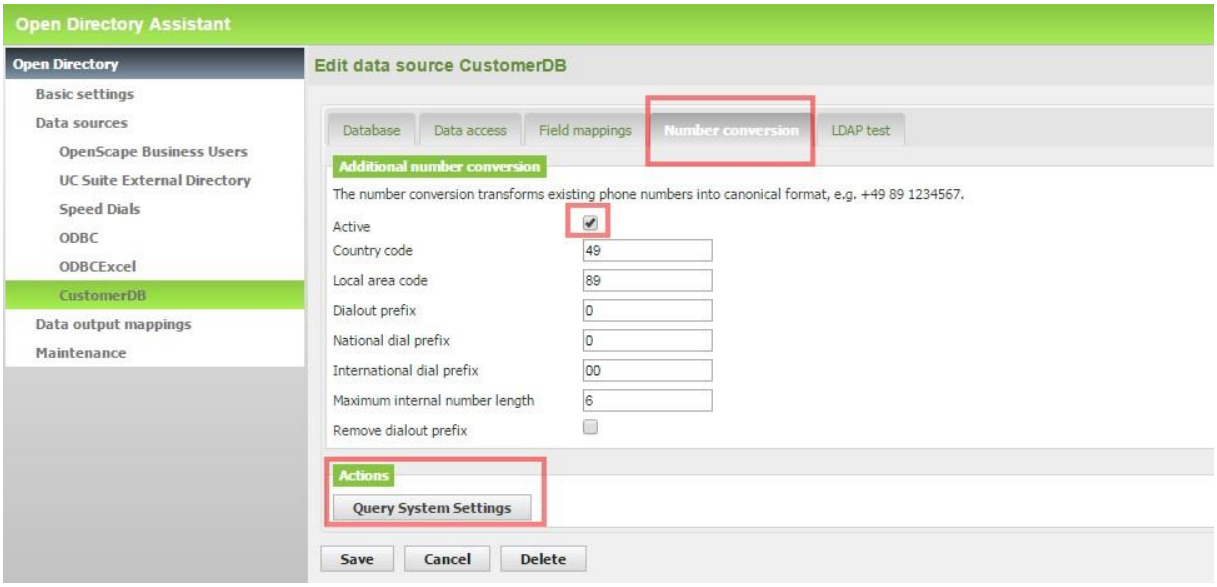

Figure 9 Optional Phone number conversion

A click in the checkbox “Active” enables the number conversion. The required conversion parameters can be entered either manually or can be retrieved from the system configuration by a click to “Query System Settings”.

After an ODS restart the result of the number conversion can be checked within the LDAP Search results of the “LDAP test”.

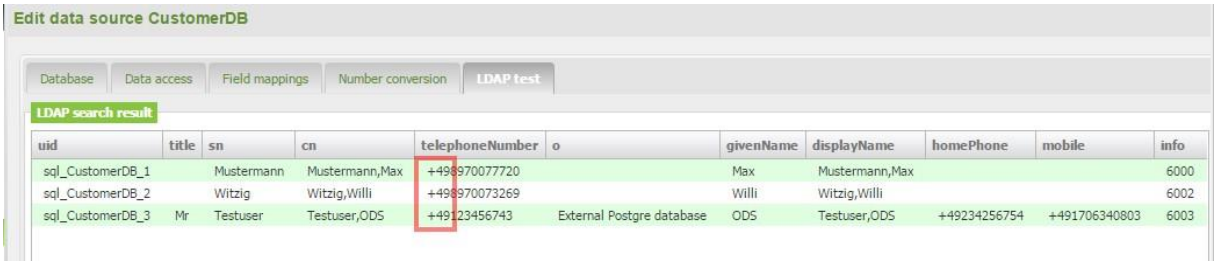

Figure 10 Test of the LDAP output with phone number conversion

After successful test the ODS configuration is finished.

3.3.6. Data Source Status

Before leaving the ODS configuration the connection status of the PostgreSQL database can be checked by clicking to the Data source tab within the left pane of the Open Directory window.

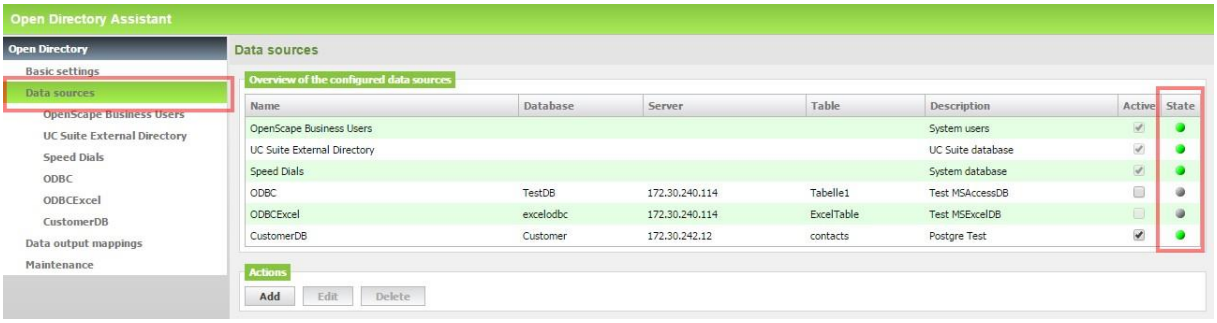

Figure 11 Overview about the connection status of all configured Data Sources

3.4. UC Suite external LDAP provider configuration

Enter UC Suite Server configuration and open the dialog for external LDAP provider.

Figure 12 UC Suite – LDAP configuration

Open the configuration dialog and enter the following values.

- ODS server address 192.168.1.154
- Port 389 (LDAP default)
- Username: uid=uc,dc=web (see note below)
- Password BODtest! (as configured before)
- LDAP Base distinguish name d c=web

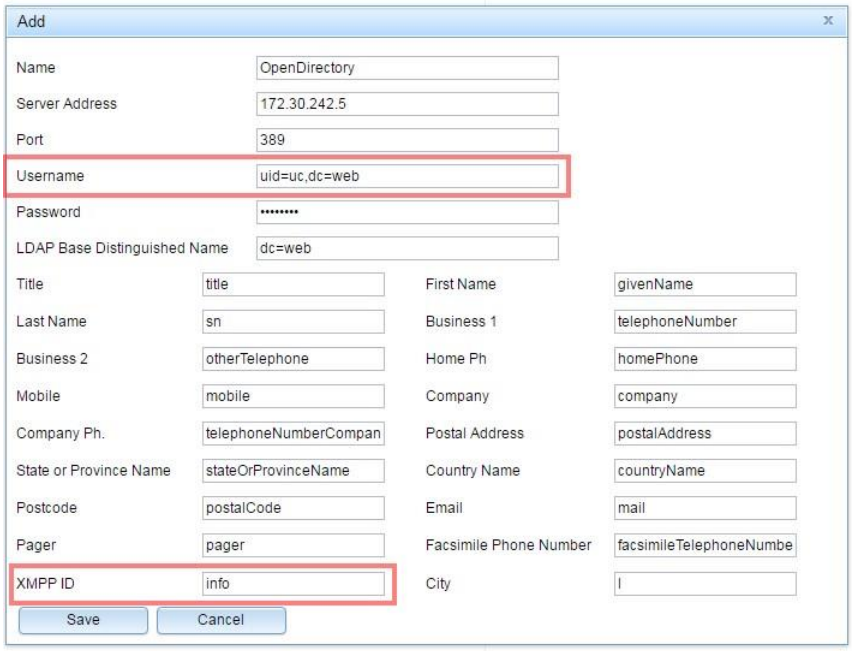

Figure 13 UC Suite – ODS configuration and LDAP field assignment

The UC- Suite default field assignment fits to the ODS LDAP schema except the XMPP ID field. Assign the ODS LDAP field “info” to the UC Suite XMPP-ID field in order to make the XMPP information available for the “Branch on data” element.

Note:
The username with the ODS configuration is set to uid=ldap,dc=web. This account provides the data of all data sources which are connected to the ODS. For UC Suite the internal user and entries within the external directory are not relevant as a LDAP search result as the UC Suite retrieves these data directly from its database.

In order to suppress the internal user and external directory entries the following user name for the ODS login must be used:

uid=uc,dc=web

3.4.1. Check LDAP provider connection

The overall LDAP configuration can be checked by using the search function of a myPortal client. Ensure within the search options that the search is done within the “External Offline Directory” only. Afterward search for a phone number which is stored in the external database.

The search function provides the contact data from the external directory, if the LDAP connection is successfully established. In case that the search fails, the parameters within the UC Suite server configuration and the accessibility of the ODS server has to be checked.

3.5. UC Suite Schedule and CCV configuration

The “Branch on data” element is entered within the CCV configuration of a contact center schedule.

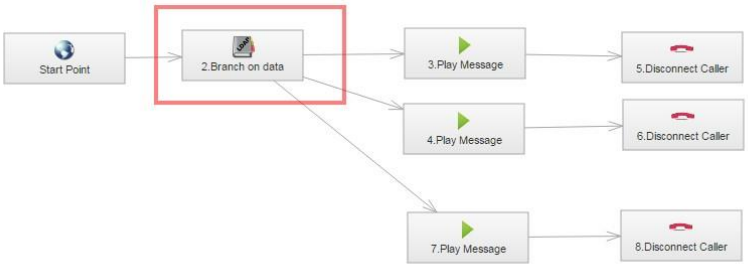

Figure 14 UC Suite Contact Center – CCV configuration

Within the properties of the “Branch on data” element the variable and value for the comparison and branches for true, false and timeout can be configured.

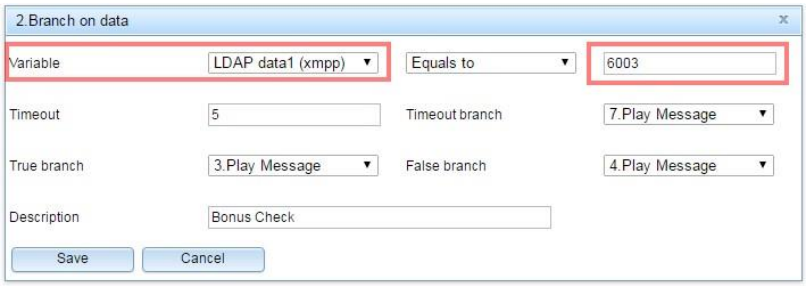

Figure 15 UC Suite – Branch on data elemnt settings

Keep in mind that only an integer value can be compared.

3.6. Test of the configuration

After saving the ccv, schedule and after assignment of the schedule to a queue, check if the branches within the ccv are executed correctly depending on the value within the variable (XMPP/Bonus).

Make an external call to the contact center queue with the branch on data element using a caller number (CLIP) which is entered for a contact in the external database. If necessary create a new contact within the source database for tests. Do not forget to set also the value for the “Bonus” in the database

Use the equal expression within the Branch on data element to check the “true” branch. After successful test change the “value” in order to check the “false” branch.