CARDPRESSO
more than an application

R&D TECHNOTE
DATE: 2022-05-20

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Subject: Active Directory Database

Summary

This technote shows how to use Active Directory as a database source.

This feature allows using data from Active Directory to populate fields on the card, as if it were a read-only SQL database.

Notes

The feature is only available for **XXL** licenses.

The connection to Active Directory is read-only, the data will never be modified or deleted on the server side.

This feature makes use of Windows libraries to communicate with Active Directory servers, and as such it is only available on Windows.

The connection to the Active Directory is done securely with SSL.

The data obtained is presented in the order given by the server and is not sortable.

Connecting

This section explains the connection wizard related to Active Directory and its options.

Defaults

The Active Directory database driver is implemented so that if the user presses next on all the connection wizard's pages then cardPresso will connect to the local Active Directory using the current user and display user objects with a few pre-selected properties, serving as an easy way to test and demonstrate the functionality of this feature.

Database driver selection

In the Database Connection Wizard there is now a new entry named "Active Directory Database Driver".
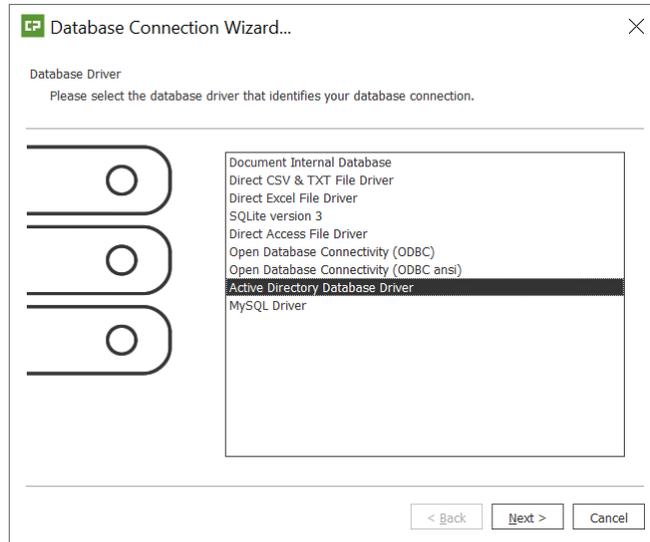
Selecting that entry will lead to the Active Directory database connection page.

Database connection configuration
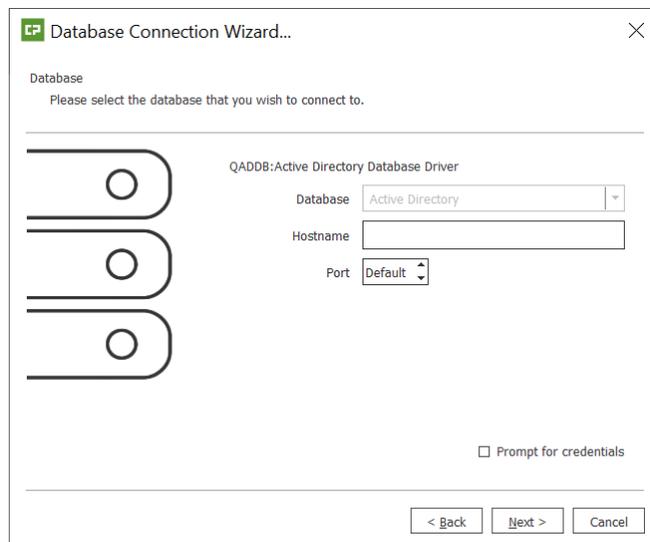
 In this page you can specify the Active Directory server to connect to as well as with which credentials.

If a hostname is not specified, cardPresso will use the default Active Directory server of the current computer.

If "Prompt for credentials" is unselected, then cardPresso will use the Windows user account that is running cardPresso when the connection is established.

If "Prompt for credentials" is selected, then a dialog appears where the username field expects either the username of the Windows account, or the account's email, and in the password field is where to insert user's password as used in Windows login.

Leaving the username and password fields empty will use the active user's account just like if "Prompt for credentials" was unselected.

Select table
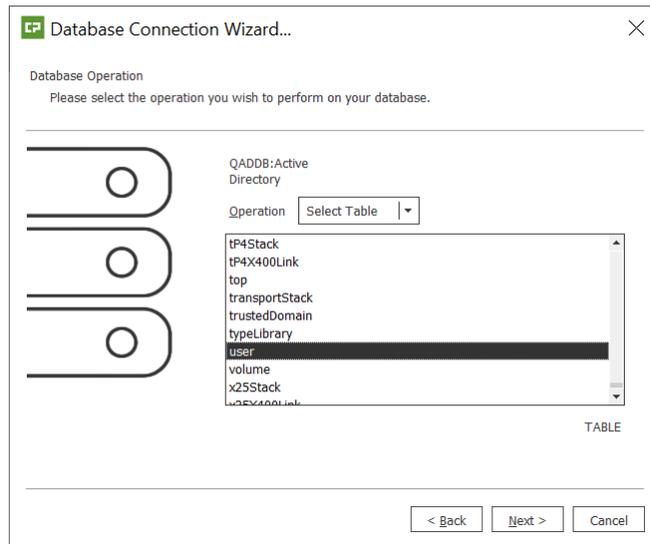
In the table selection page, all Active Directory object classes found are listed.

Here is where the user chooses the object type that will behave as if it were a table, and whose data will be accessed.

Select columns
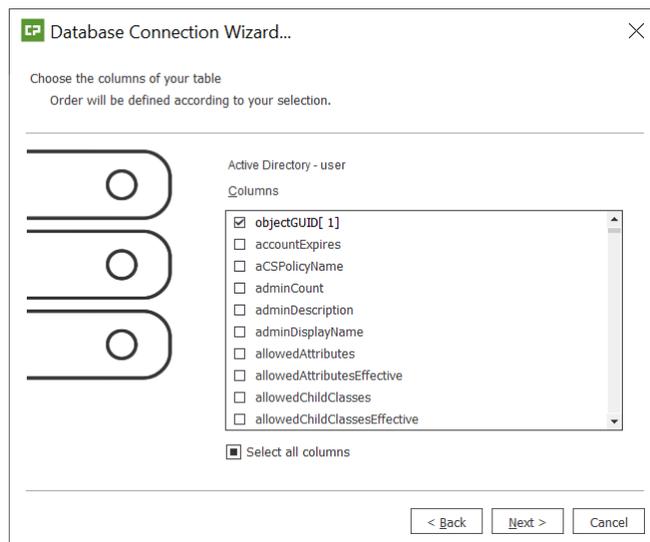
In the column selection page, all properties related to the previously selected object class are displayed.

The property `objectGUID` is pre-selected and cannot be unselected, as it is used to uniquely identify each entry.

If the user object class was selected, then there are some additional suggested fields pre-selected: `name`, `givenName`, `sn`, `department`, `mail`, `thumbnailPhoto`.

Guide columns

Should be set to the default of `objectGUID` selected, any change will make the database connection unsuccessful or behaving erroneously.

Filter
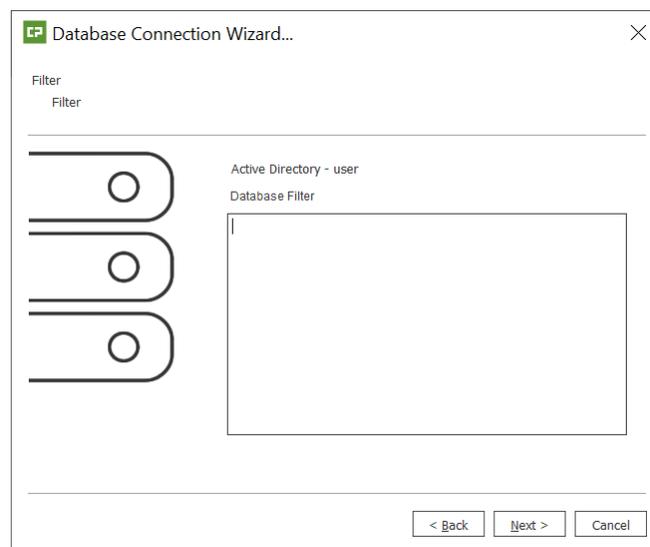
In the filter page the user can insert a filter to restrict what entries are to be shown.

This filter is compatible with filters added in the "Database Filter" side bar, both filters will be applied together.

The filter syntax accepted is as follows.

LDAP filter

The syntax used by Active Directory to filter the results it presents, it's comparable to SQL for SQL databases.

It is possible to filter using properties that were not selected to be shown as columns.

Examples

```
(givenName=Diogo)
```

```
(&(givenName=*)(sn=*))
```

SQL WHERE

An SQL WHERE clause without the WHERE keyword.

This is the same syntax as accepted by other cardPresso SQL database drivers and produced by the filter located in the "Database Filter" side bar.

Examples
```
name LIKE 'Diogo%'

givenName IS NOT NULL AND sn IS NOT NULL
```

Both types
The filter field accepts using LDAP filter and SQL WHERE syntax at the same time.

To achieve this, the following conditions must be followed:

- The LDAP filter part must be before the SQL WHERE part
- The first parenthesis of the LDAP filter must be the first character of the filter
- After the LDAP filter part there must be either an "AND" or "OR" operator joining the LDAP and the SQL sections

Examples
```
(name=Diogo *) AND name LIKE '% Santos'

(&(givenName=*)(sn=*)) AND department = '%R&D%' AND thumbnailPhoto IS NOT NULL
```

Column order
Currently the settings on this page will have no effect, since the values obtained from the Active Directory are presented in the received order and are not sortable.

Connection complete
After finishing the connection wizard, the Active Directory has been successfully open as a database. The user may then make use of the database features just like with any other SQL database.
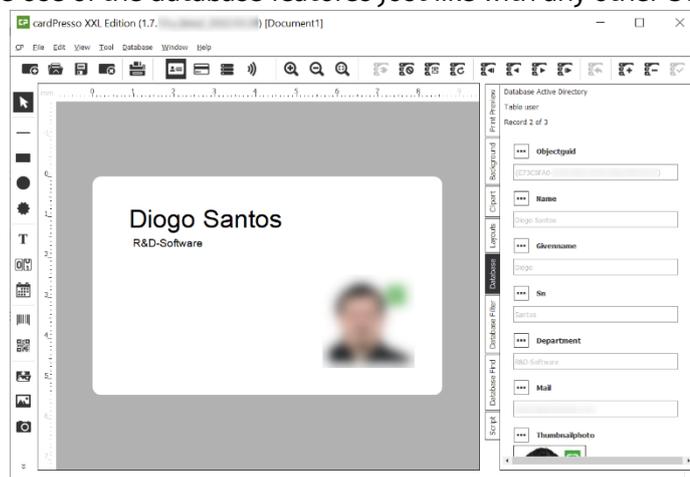
Data representation issues
In Active Directory, the data is stored often in a different format than what is presented, for example, `objectGUID` is in a binary format and must be processed into its displayed textual format.

Due to the number of different properties that exist and the differences between Active Directory configurations, there might be some properties that don't show up correctly.

For such cases, please update your cardPresso version, and if the issue persists we ask that you report the issue to our support team by sending an email to *support@cardpresso.com*, so we can fix the visualization of that property.