# Virtual system - adding (and deleting) extended attributes managed by CzechIdM

system, virtual, tutorial, extended, attributes

## Introduction

After you've connected a virtual system to CzechldM (see the tutorial here), you may need to add some extended attributes which are present in the connected system. To achieve this, make sure you have 1) connected the virtual system, 2) have admin set as the implementer, and 3) are logged in as admin.

Let's assume that the managed system contains the information about the building in which each person has their office. To add this information to the IdM, we have to follow several steps.

### Step 1: modify form definitions

First, click on Setting in the left panel and choose Form definitions. In the list, find idmldentity and open it (with the magnifying glass). After that, select Form Attributes and click the green Add button. Only two fields are required: Code, and Name. Make sure you change the Attribute type from default (Short text) if the type is different. You can also set e. g. a default value or a validation using regular expressions if it makes sense in the specific case. Once you've finished, click Save.

L Dashboard		Form definitions					
Tasks							
進 Users			Code or name				+ Add 🝸 Filter 🔺 🔒
Organization		Code or name					Cancel filter Filter
🔑 Roles	۲	□ Туре ≑	Main definition $\Leftrightarrow$	Code ≑	Name ≑	Module ≑	System definition $\Leftrightarrow$
8 Systems		C Q Idmidentity		default	default		
🔗 Virtual systems	٠	Q IdmCodeListItem		environment	environment		
E Reports		Page 2 of 2			ee e 1 2 = ==		11 - 12 of 12 record Number of records 10 ~
Notifications			And a short one				
A Cottings	~	BCV solutions s.r.o.   Help   Ser	viceDesk   About app				
© Sectings							
+ Workflow definition	205						
Script definitions							
O Code lists							
O Form definitions							
A Modules							
Generate values							
Task scheduler							
Password policies							
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Basic information	Form	attribute	25										
Form Attributes												+ Add	🔻 Filter 🔻 💋
Attribute's values		Code ≑	Name ≑	Attribute type ≑	Face type	Default value	Required	Unique	Min	Мах	Regex	System attribute 🌲	Order ≑
Form localization		building	building	Short text (2000 chars)	Short text (2000 chars)								0
		klinika	klinika	Short text (2000 chars)	Short text (2000 chars)						.{3,30}		0
	<b>Q</b>	rights	rights	Short text (2000 chars)	Short text (2000 chars)								0
												1	- 3 of 3 records

## Step 2: add the attribute to VS configuration

Click Virtual systems in the left panel and select List. Open you virtual system and select Configuration. Add your attribute (building) to the list of attributes and click on save.

czechidm			Test 🖿 🔀 1. admin 🛎
1 Dashboard		& NewVirtual	Svstem system details
≣ Tasks		•	
🛎 Users		Basic information	Connector configuration
Organization		O Configuration	Virtual system connector 1.0.1 (czechidm)
🔑 Roles	¢	Provisioning brake	Connector configuration Pooling configuration
Ø Systems		☑* Accounts	
Ø Virtual systems	¢	O Entities	Required confirmation by the implementer If not checked, then all requests will be solved immediately. No notification will be sent to implementers.
Reports		窗 Scheme	Attributes (multi) *
lı Audit	٠	Mapping	rights
Notifications	¢	P Roles	klinika building
🗘 Settings	¢	₽ Synchronization	Properties for create EAV model.
← Collapse menu		O Provisioning	Implementers
			× Administrator (admin) X *
			Requests for implementing changes on the real system will be created for these implementers. Every implementer must be an identity in CzechidM. Values are UUIDs of identities (multivalued).
			Roles of implementers
			Select or type to search
			All identities with these roles will be implementers. Every role must be a role in CzechidM. Values are UUIDs of roles (multivalued).
			Supports account disable/enable
			Caue
			906

### Step 3: modify scheme and mapping

#### 3a - scheme

Click Scheme in your virtual system. You should only see ACCOUNT; open it with the magnifying glass. In Scheme attributes, click the green Add button. In here, fill out the name of the attribute (building), its data type (java.lang.String in this case), and check boxes for Able to read, Able to create, Able to edit, and Returned by default. Click save.

O Configuration	System name			
Provisioning brake	NewVirtualSystem			·
Accounts	Object name			
O Entities	_ACCOUNT_			*
国 Scheme				
Mapping				Back Save and continue
P Roles	I≣ Scheme attributes			
₽ Synchronization				+ Add 🔻 Filter 🕶 💋
O Provisioning	🗆 Name 🗢	Data type 💠	Required 🗢	Multivalued 🗢
	D Q building	java.lang.String		
	🗆 🔍 email	java.lang.String		
		Java.lang.Boolean		
	G firstName	Java.lang.String		
	🗆 🔍 klinika	Java.lang.String		
	🗆 🔍 lastName	java.lang.String		
		java.lang.String		
	D Q phone	java.lang.String		
	c rights	java.lang.String		
	C Q titleAfter	java.lang.String		
	Page 1 of 2			1 - 10 of 11 records Number of records 10 V

🔗 NewVirtualS	System System details
Basic Information	i≣ Attribute details
O Configuration	Attribute belongs to object
<ul> <li>Provisioning brake</li> </ul>	_ACCOUNT_
B <sup>*</sup> Accounts	Name
O Entitles	building *
📓 Scheme	Data type
Mapping	Java.lang.String
P Roles	Required
₽ Synchronization	🖸 Able to read
O Provisioning	Multivalued
	C Able to create
	C Able to edit
	Returned by detablit
	Back Save

### 3b - mapping

After that, we have to add the attributes to the mapped attributes. Click Mapping and open Provisioning where you will see the list of mapped attributes. Click Add. Select the Attribute in schema (building). Check the box Extended attr. and fill out the desired IdM key. Click Save.

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≓ Synchronization ○ Provisioning	Entity type												
	Identity												
	Account protection (before delete) Enables account protection before deletion. Wh provisioned. To really delete the idM account (a Length of protection interval (in days)	en trying to remove an ic nd thus the account on ti	iM account (last rela he end system), it wi	tion assigning this acc I occur after the expir	count), it will be marked a ration of the protection ir	is 'Is protected'. Such an accoun iterval. Deleting performs a sch	it will not be deleted or eduled task.						
	III Mapped attributes						Back Save and continue						
	□ Name ≑	IdM key 🗘	Identifier \$	Entity attr. 🗘	Extended attr. ≑	Transform from system	Transform to system						
	D Q building	building											
	email	email		V									
	_ENABLE_	disabled		V			V						
	firstName	firstName		V									
	🗆 🔍 klinika	klinika											
	🗆 🔍 lastName	lastName		V									
	□ <b>Q</b> _NAME_	username		V									
	Rights' - multivalued merge attribute.												
		titleAfter		V									
	C Q titleAfter												

Basic information	Attribute mapping details		
O Configuration	Basic settings Where is attribute used?		
Provisioning brake	Disabled		
Accounts	Mapping name		
O Entities	Default provisioning (Identity - Provisioning)		~
窗 Scheme	Attribute in schema		
Mapping	building (_ACCOUNT_)		× *
₽ Roles	Name		
₽ Synchronization	building		*
O Provisioning	User-defined name of the attribute		
	Strategy		
	Set value as it is		× •
	Send always		
	Send IdM value only if its not null		
	Identifier		
	Entity attr.		
	Z Extended attr.		
	Main form definition is supported only.		
	Entity field	IdM key	
	Select	→ building	•
		Name of entity attr., name of extended attr., or key to confidential storage.	
	Confidential attr.		
	Authentication attr.		
	Attribute used for authentication on connected system.		
	Include on password change		
	Send this attribute into provisioning, when password is changed.		



If you want to have a multivalued attribute, you have to set it as multivalued not only in Scheme but also in Settings > Form definitions > VsAccount (for the virtual system you are editing). Go to Form Attributes, open the Form Attribute with the magnifying glass and check Multivalued.

### Step 4: check the functionality

If you open the details of a user with a role defined in the virtual system (with the magnifying glass), click Show full details and select More information, you should now see that you can set the value of the attribute (building). Try to fill in some test information and click Save.

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1 Dashboard		Lack Black (ia	ack.white) User details				
Tasks							
a Users		Jack Black (Jack.white)					
Organization		L Personal data	More information				
🔑 Roles	¢	O More Information	building				
8 Systems		Password	Empire State Building				
Ø Virtual systems	۲	P Roles	Generated by schema attribute building in resource NewVirtualSystem. Created by SYSTEM.				
🗠 Reports		Positions	klinika				
JI Audit	<	🖶 Subordinates	klinika				
Notifications	<	Authorize roles	rights (multi)				
O Settings	•	2* Accounts	changed_rights				
← Collapse menu		O Provisioning O Audit O Entity events	Generated by schema attribute rights in resource NewVirtualSystem. Created by SYSTEM.		c	A	
		C Linky office					

Now go to Virtual systems in the left panel and click Requests. You should now see that there is a new request. If you open it you will see in the detail that the attribute has changed. Also, if you click Notifications and Notifications history in the left panel, you will see that the implementer has been notified that they should make the change in the system they manage and then confirm they've done so in the IdM.

czech <b>idm</b>			Test 🛌 麗 🏦 admin 💩 🔿
1 Dashboard		Requests	
≣ Tasks			
🛎 Users		Unresolved requests Archive	
Organization			🔻 Filter 🔺 💋
🔑 Roles	٢	Date 👻	Cancel filter Filter
8 Systems		UID (account identifier) System 👻	
🔗 Virtual systems	*	UID         System name         Type ♀         State ♀         Without confirmation ♀         Implementers         Created ♀	Creator ≑
8 List		admin 05.06.2019 14:01:15	[SYSTEM]
Requests			1 - 1 of 1 records
🗠 Reports		BCV solutions s.r.o.   Help   ServiceDesk   About app	•
II Audit	٠		
Notifications	۲		
Settings	۲		
← Collapse menu			

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Roles	•	State	Unresolved						
8 Systems		Туре	Update						
🔗 Virtual systems	~	Without confirmation	No						
& List		Creator	[SYSTEM]						
O Requests		Created	05.06.2019 14:01:15						
Requests		Implementers:							
☑ Reports		Administrator (admin)							
.lt Audit	٠	Target state on the system:							
Notifications	•	Attribute		Target value				Previous value	
Settings	<	_ENABLE_		true				true	
← Collapse menu		_NAME_		jack.white				jack.white	
		building		Empire State Build	ing				
		email		em@em.com				em@em.com	
		firstName		Jack				Jack	
		klinika		klinika				klinika	
		lastName		Black				Black	
		phone							
		rights		lékař primář				lékař primář	
		titleAfter							
		titleBefore							
		Previous unresolved requests:				N	ext unresolved requests:		
		No results found					No results found		
					0 - 0 of 0 records				0 - 0 of 0 records
									Back Implemented

### **Deleting attributes on virtual systems**

Some of the attributes may be superfluous in some cases, e. g., a system which only needs identity's first name and last name to create a login won't need to know user's phone number. Unless we remove those attributes, they will present an unnecessary administrative load since the implementer will be notified each time they change, even though they are not relevant for them.

Removing these attributes is similar in process to creating them - basically, we have to retrace our steps and undo the changes we've made in steps 1, 2 and 3.

If you want to stop provisioning an attribute which is present in other systems you have to do even fewer changes. This can be relevant in the above mentioned phone number case. In this case, undo only steps 2 and 3.

If you want to remove an attribute from a virtual system which was already used, so it has existing virtual accounts with this attribute filled, you have to remove the values of the accounts' attributes first. This can now (as of v. 10) be done only in DB. So make sure you have an access to the IdM database.

First, remove the mapping of the attribute. Click Virtual systems, List, Mapping, and Provisioning. Check the checkbox next to the attribute you want to remove. Above the list, a new dialog should appear, Operation with selected record. Click and choose Remove. Click Yes.

🔗 NewVirtualS	System System details			
Basic Information	🕃 Object in system			
O Configuration	System name			
Provisioning brake	NewVirtualSystem			~
🖻 Accounts	Object name			
O Entities	_ACCOUNT_			*
国 Scheme				
Mapping				Back Save and continue
Roles				
≓ Synchronization	E SC Operation with selected record:			
O Provisioning	Operation with selected record:			+Add ₹ Filter ▼ 🎜
	Remove	Data type 🌻	Required 🗢	Multivalued 🗢
	🛛 🔍 building	java.lang.String		
	🗆 🔍 email	java.lang.String		
	C _ENABLE_	java.lang.Boolean		
	firstName	java.lang.String		D
	C Q klinika	java.lang.String		
	🗆 🔍 lastName	java.lang.String		D
		java.lang.String		
	D Q phone	java.lang.String		
	C Q rights	java.lang.String		Ø
	C Q titleAfter	java.lang.String		
	Page 1 of 2		ee e 1 2 a aa	1 - 10 of 11 records Number of records 10 ~

Then move to Scheme, click ACCOUNT. Check the checkbox next to the attribute you want to remove. Above the list, a new dialog should appear, Operation with selected record. Click and choose Remove. Click Yes.

Basic information	B Object in system								
Configuration	System name								
Provisioning brake	NewVirtualSystem								
Accounts	Object name								
Entities	_ACCOUNT_								
Scheme									
Mapping				Back Save and continu					
Roles									
Synchronization	Scheme attributes Operation with selected record:								
	Operation with selected record:	•		+ Add 🝸 Filter 🕶					
0	Remove	Data type 💠	Required 🗢	Multivalued 💠					
	🛛 🔍 building	java.lang.String							
	🗆 🔍 email	java.lang.String							
	C _ENABLE_	java.lang.Boolean							
	Q firstName	java.lang.String							
	🗆 🔍 klinika	java.lang.String							
	A lastName	java.lang.String							
		java.lang.String							
	Q phone	Java.lang.String							
	Q rights	Java.lang.String		V					
		java.lang.String							
	a ducater								

Then go to Configuration, find Attributes and delete the attribute you want to remove. Click Save.

8 NewVirtualS	ystem System details
Basic Information	Connector configuration
O Configuration	Virtual system connector 1.0.1 (czechidm)
Provisioning brake	Connector configuration Pooling configuration
🖾 Accounts	
O Entities	Required confirmation by the implementer if not checked, then all requests will be solved immediately. No notification will be sent to implementers.
III Scheme	Attributes (multi)
Mapping	uuebeuare rights
👂 Roles	Kinika Suidins
₽ Synchronization	Properties for create EAV model.
O Provisioning	Implementers
	× Administrator (admin) × ×
	Requests for implementing changes on the real system will be created for these implementers. Every implementer must be an identity in CzechidM. Values are UUIDs of identities (multivalued).
	Roles of implementers
	Select or type to search
	All identities with these roles will be implementers. Every role must be a role in CzechidM. Values are UUIDs of roles (multivalued).
	Supports account disable/enable
	Save

Next, delete the attribute from the Form definitions of VsAccount. Click Form definitions in Settings, find the VsAccount item, check under Name that this is the virtual system from which you are removing the attribute. Open the item using the magnifying glass.

						+ Add 🔻 Filter 🔺 💋
new	virtual					Cancel filter Filter
	Type 💠	Main definition $\Leftrightarrow$	Code 🗘	Name 🗢	Module 🗢	System definition $\Rightarrow$
	VsAccount		czechidm:virtual-system- basic:eu.bcvsolutions.idm.vs.connector.basic.BasicVirtualConnector:1.0.1:systemid=4c64fdc4- e3ef-43d6-b904-fcc6334ef434	Virtual system for [new virtual]		
						1 - 1 of 1 records

Go to Form Attributes, check the box next to the attribute you want to remove and click on Operation with selected record, choose Remove and click Yes.

ic information	Form attributes	elected record:										
Form Attributes	Operation with sele	cted record:	*								+ Add	🔻 Filter 🕶 💋
ibute's values	Remove		Attribute type ≑	Face type	Default value	Required	Unique	Min	Мах	Regex	System attribute 🌩	Order ≑
calization	🛛 🔍 building	building	Text	Text								0
	C Q firstName	firstName	Text	Text								0
	🗆 🔍 klinika	klinika	Text	Text								0
	C Q rights	rights	Text	Text								0
	C Q title	title	Text	Text								0
	C Q lastName	lastName	Text	Text								1
	🗆 🔍 email	email	Text	Text								2
	C Q titleAfter	titleAfter	Text	Text								3
	C Q titleBefore	titleBefore	Text	Text								4
	Q phone	phone	Text	Text								5
											1 - 10	of 10 records

If this operation fails with the message that there are already some values, you must go to the IdM

Virtual system for [NewVirtualSystem]

%NewVirtualSystem%'));

database and delete those values by SQL. It's strongly recommended to make a backup of the database prior to this action.

```
-- Check the values you are about to delete - change the code of your
attribute and your system name --
SELECT * FROM vs_account_form_value WHERE attribute_id IN (SELECT id FROM
idm_form_attribute WHERE code='building' AND definition_id IN (SELECT id
FROM idm_form_definition WHERE name LIKE 'Virtual system for
%NewVirtualSystem%')
-- Delete the values
DELETE FROM vs_account_form_value WHERE attribute_id IN (SELECT id FROM
idm_form_attribute WHERE code='building' AND definition_id IN (SELECT id
FROM idm_form_definition WHERE name LIKE 'Virtual system for
```

Then you can remove the attribute from the Form Attributes as written above.

The attribute is still present in the detail of the user; however, it is no longer connected to the virtual system and the implementer will not be notified when the attribute's value changes.

If you want to remove the attribute from the IdM entirely, you have to undo step 1 as well. Please note, however, that if any role has this attribute filled in (not empty), you will not be able to remove the attribute. Go to Settings, Configuration, Form definitions, Form Attributes. Check the checkbox next to the attribute you want to remove. Above the list, a new dialog should appear, Operation with selected record. Click and choose Remove. Click Yes.

		default											
≣ Tasks		delault											
🖆 Users		Basic information	Form attribute	selected record:									
Organization		Form Attributes	Operation with se	lected record:	*						+ Add	🔻 Alter 🕶 💋	
👂 Roles	<	Attribute's values	Remove		ribute type ≑	Face type	Default value	Required	Unique	Min M	ax Regex	System attribute $\Rightarrow$	Order ≑
ଡ Systems		Form localization	🛛 🔍 building	building	Short text (2000 chars)	Short text (2000 chars)							0
Virtual systems	<		🗆 🔍 klinika	klinika	Short text (2000 chars)	Short text (2000 chars)					.{3,30}		0
± Reports			C Q rights	rights	Short text (2000 chars)	Short text (2000 chars)							0
h Audit	<											1-	3 of 3 records
Configuration     Average Section     Configuration     Script definitions     Code lists     O Form definitions     Avodules	ons												

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