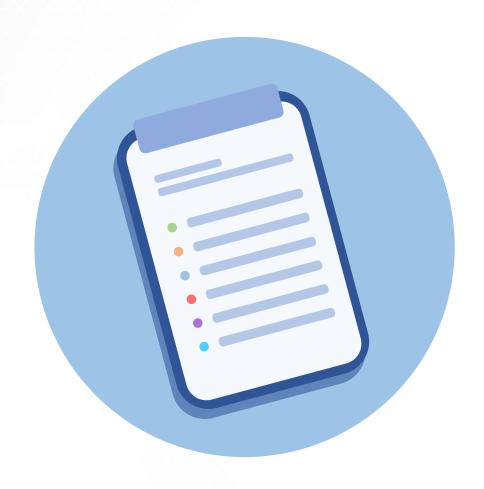
# Evolveum

MidPoint 4.3: Axiom Query

# Agenda



- Introduction
- Setup & Quick Demo
- Filters
- More practical examples



## Introduction

MidPoint 4.3 brings new language for filters – **Axiom Query** 

#### Axiom Query

- provides simplified syntax for standard midPoint filters (XML)
- does not introduce new types of filters, just nicer names
- it is based on existing filters, so it shares same limitations

**Example:** givenName = "Anton" and familyName = "Tkáčik" and roleMembershipRef/@ matches ( name = "developer")



# Setup

- We will use midPoint 4.3 with Hogwarts sample loaded
- Axiom Query is supported by default in XML
- For use in GUI GUI Experimental Features must be enabled



#### **Enabling Axiom Query in GUI**

- 1) In Admin GUI navigate to Configuration → System → Admin GUI
- 2) Click Show Empty fields in Admin GUI Configuration section
- 3) Select True in Enable experimental features
- 4) Save configuration changes, logout and login in order to changes to be applied.

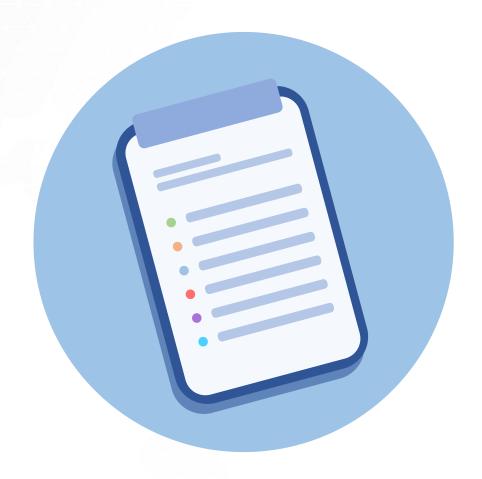


# **Using Axiom Query in GUI**

- By default Axiom Query is not default search filter type. You can switch to Axiom Query by clicking down arrow ▼ in search button and select Axiom Query.
- Lets start with simple examples:
  - Go to Users → All Users
  - Change to Axiom Query
  - Search for all Weasleys using:
    - familyName = 'Weasley'
    - name endsWith "weasley"



#### **Filters**



- Comparison filters
  - equal, less, greater
- String filters
  - StartsWith, endsWith, contains, fullText
- Logical Filters
  - and, not, or
- Reference Filters
  - reference matches, inOrg, isRoot
- Nested Filters
  - matches



#### **Filters**

most item filters are in form of 'property how-to-match value'

Formally it is: itemPath filterName value

- ItemPath: specifies which item is matched with filter
  - givenName, activation/administrativeStatus, assignment/targetRef/@
- filterName: name of actual filter
- value: Literal value or Item Path which should be matched according filter specification.
  - Strings need to be quoted, single and double qoutes are supported



# **Comparison Filters**

Filter	Alias	Description
equal	=	Matches if item is equal to value
not equal	!=	Matches if item is different than value
less	<	Matches if item is smaller than value
lessOrEqual	<=	Matches if item is smaller or equal to the value
greater	>	Matches if item is greater than value
greaterOrEqual	>=	Matches if item is greater or equal to value



# **Comparison Filters**

- Equals: All Weasley family members
  - familyName = "Weasley"
- Not Equals: Everyone except Weasleys
  - familyName != "Weasley"
- All users which will not be valid next year
  - activation/validTo < "2022-01-01"</li>



# **String Filters**

- startsWith Matches if item starts with specified string
  - Searching for organization units starting with quiddich
    - name startsWith "quiddich"
- contains Matches string property if it contains specified substring.
  - All names which contains "mc"
    - name contains "mc"
- endsWith Matches string property if it ends with specified substring.
  - All users which name ends with "weasley"
    - name endsWith 'weasley'
- fullText Performs full text search. Note that path must be dot (.)
  - fullText "Minerva"



## **Logical Filters**

- and matches if both filters are true
  - givenName = "Fred" and familyName = "Weasley"
- or matches if any of filters is true
  - givenName = "George" or givenName = "Fred"
- not negates filters, notice not prefixes filter name
  - familyName not startsWith "W"



# Reference Matches Filter

matches: allows to match by reference (ObjectReference) and its 3 main properties.

- oid exact match of oid
  - assignment/targetRef matches (oid = efaf89f4-77e9-460b-abc2-0fbfd60d9167) (users in Hufflepuff)
- relation matches any reference with specified relation
  - roleMembershipRef matches (relation = manager)
- targetType matches any reference with specified target type
  - roleMembershipRef matches (targetType = OrgType)



# Reference Matches Filter

- Reference matches filter only support equals for oid, relation and targetType
- It's possible to specify all three and same time.

```
    roleMembershipRef matches (
        oid = 'bc3f7659-e8d8-4f56-a647-2a352eead720'
        and relation = manager
        and targetType = OrgType
        )
```



# **Organization Filters**

- inOrg matches if object is member of organization subtree. Filter is applied to object as a whole so path must be dot (.)
  - All Quidich players
    - inOrg "00000000-team-0org-0000-111111111111"

- isRoot matches if role / organization unit is root
  - filter does not have value
  - Filter is applied to object as a whole so path must be dot (.)
  - isRoot

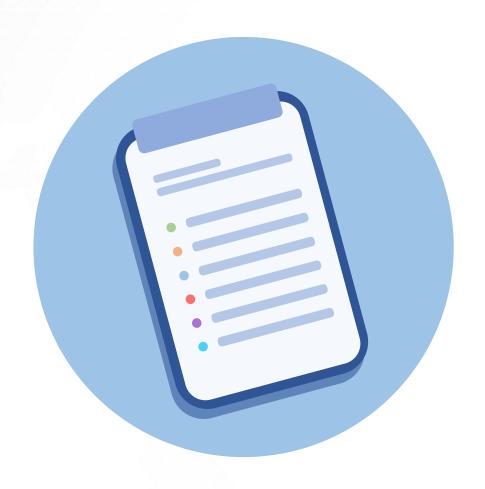


#### Limitations

- Axiom Query currently does not support following features of XML filters
  - Variables
  - Scripting Expression
- This limits its use mostly to GUI, exploratory filtering and some simpler use-cases
- Support for variables, expressions may be added in later releases
- Error messages may not be helpful



# **Examples and advanced uses**



- Reference Dereference
- Object Collections Example
- Use in XML



# Reference dereference using @

XML Filters & Axiom Query support object dereference and matching on referenced object

- supported only for repository objects
- Example: Search for all Weasleys, who are in quiddich team familyName = "Weasley" and roleMembershipRef/@/name startsWith "quiddich"

This is useful in GUI, if you do not remember OID of referenced objects, but filter is less effective.



# **Object Collections example**

We will create new Users view, which will display managers only.

- 1) Navigate to Configuration → System → Admin GUI
- 2) Go to Object Collections Views and click on + next to Object collection view section
- 3) Scroll down to Add form
- 4) Fill in new view, with following values

```
Identifier: managers, Type: User, Visibility: Visible, Display Label: Managers Collection \rightarrow Filter \rightarrow click on Axiom Query and enter
```

- . type UserType and roleMembershipRef matches (relation = manager)
- 5) Save changes, logout and login, click on Users → Managers
- 6) You have Object View which lists all organization managers



# Use in XML

Axiom Query filters are usable in any place, normal XML filter would be used. Axiom Query filter is wrapped inside <text> element inside <filter>

```
<filter>
     <text>roleMembershipRef matches (relation =
manager)</text>
</filter>
```



# Want to learn more?

For more detailed documentation of Axiom Query please visit docs.evolveum.com



# Thank you for your time

If any questions occur, feel free to ask at sales@evolveum.com

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