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**What's New in MidPoint 4.3 "Faraday"**

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April 2021

Agenda
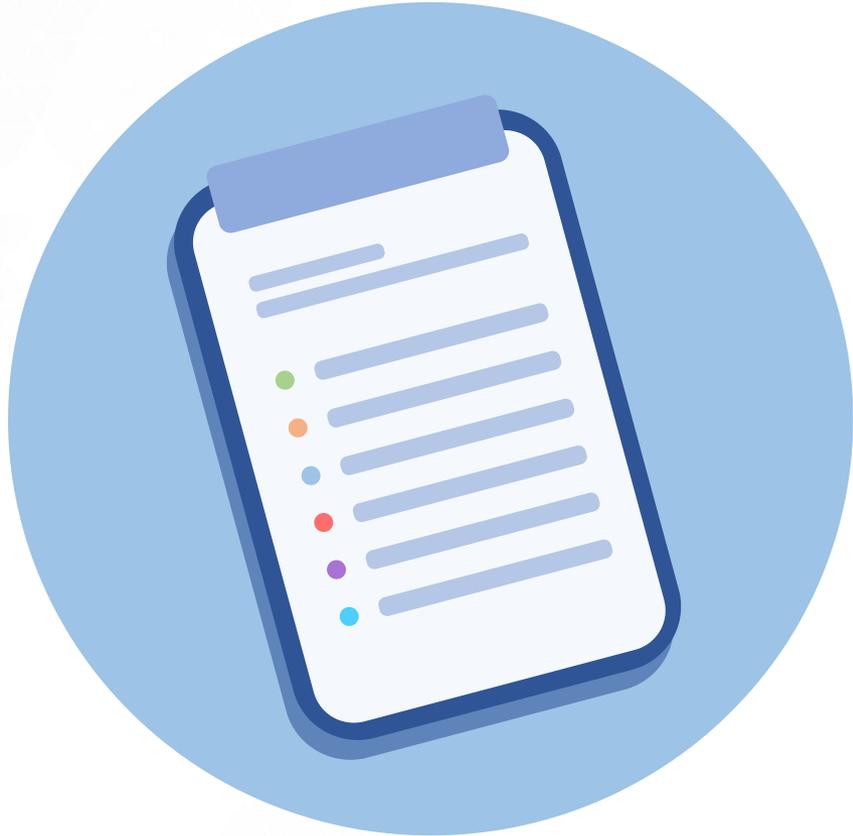
- What's new in 4.3
- Platforms
- Plans for 4.4
- Plans for 5.0

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MidPoint 4.3 "Faraday" at a Glance

- Feature release

  Short support lifetime (1 year)

- Couple of major features

  Significant tasks improvements

  Asynchronous messaging

- Plenty of smaller features and improvements

  Search, password management, configurable auditing, JSON in DB

- Internal improvements (code cleanup/speedup)

Tasks

- Progress and statistics reporting

- Error reporting

- Error handling

  Operation execution records

  Triggers

Task Progress

Recompute all focuses
100.0% (48 of 48) (closed)
Last object processed: Owner Control
4/28/21, 9:26:47 AM - 4/28/21, 9:26:51 AM (00:00:04.519)

Current item

p.weasley (423 miliseconds)

gi.weasley (455 miliseconds)

n.longbottom (418 miliseconds)
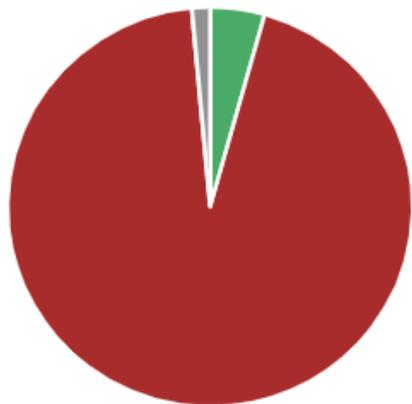
- Success (3)
- Failure (65)
- Skip (1)

LAST SUCCESS ON WEDNESDAY, 28. APR 2021 10:05:59
a.sinistra
533 miliseconds

LAST FAILURE ON WEDNESDAY, 28. APR 2021 10:06:02
p.pomfrey
481 miliseconds
Object of type 'ConnectorType' with oid '02c676c6-ef02-4129-b9da-f3a7f81fbbc6' was not found.

LAST SKIP ON WEDNESDAY, 28. APR 2021 10:05:56
a.dumbledore
78 miliseconds

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Tasks Synchronization Statistics

Synchronization situation transitions

Original state	Synchronization start	Synchronization end	Exclusion reason	Succeeded	Failed	Skipped	Total
Linked	Linked	Linked		65	0	0	65
Linked	Unlinked	Linked		1	0	0	1
No record	Unlinked	Linked		1	0	0	1
Linked	No record	No record	Protected	0	0	1	1
No record	Unmatched	Linked		1	0	0	1

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Tasks Provisioning Statistics

Provisioning operations information: HR - AccountObjectClass

Operation	Status	Count	Avg time (ms)	Min time (ms)	Max time (ms)	Total time (ms)
search	Success	1	13	0	5	13

Provisioning operations information: Localhost OpenLDAP - inetOrgPerson

Operation	Status	Count	Avg time (ms)	Min time (ms)	Max time (ms)	Total time (ms)
create	Fatal Error	3	48	5	136	146
get	Success	5	1,317	4	4,378	6,588
search	Success	3	45	0	119	137

Provisioning operations information: Localhost OpenLDAP - groupOfNames

Operation	Status	Count	Avg time (ms)	Min time (ms)	Max time (ms)	Total time (ms)
search	Success	6	9	0	15	54

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Tasks Error Reporting

Errors

⌃ Name	Timestamp	Status	Message	Record type	Owner
a.filch	4/28/21, 10:06:00 AM	Fatal Error	Object of type 'ConnectorType' with oid '02c676c6-ef02-4129-b9da-f3a7f81fbbc6' was not found.	Operation context	a.filch (ShadowType)
a.goldstein	4/28/21, 10:05:51 AM	Fatal Error	Object of type 'ConnectorType' with oid '02c676c6-ef02-4129-b9da-f3a7f81fbbc6' was not found.	Operation context	a.goldstein (ShadowType
a.johnson	4/28/21, 10:05:43 AM	Fatal Error	Object of type 'ConnectorType' with oid '02c676c6-ef02-4129-b9da-f3a7f81fbbc6' was not found.	Operation context	a.johnson (ShadowType)
b.zabini	4/28/21, 10:05:56 AM	Fatal Error	Object of type 'ConnectorType' with oid '02c676c6-ef02-4129-b9da-f3a7f81fbbc6' was not	Operation context	b.zabini (ShadowType)

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Asynchronous Resources

- Similar to manual provisioning

- Request (e.g JMS message) is sent to a specified target (e.g JMS queue)

- Tested with:

    Apache ActiveMQ Artemis 2.x

    JMS 2.0 to connect to it

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Smaller Features and Improvements

- Unification of different "table" panels

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Time	Initiator	Event Stage	Event Type	Target	Target owner	Channel	Outcome
Wednesday, 28. Apr 2021 09:45:52	administrator	Request	Add object	g.lockhart		Import	
Wednesday, 28. Apr 2021 09:45:51	administrator	Execution	Add object	s.kettleburn		Import	Success
Wednesday, 28. Apr 2021 09:45:51	administrator	Request	Add object	s.kettleburn		Import	
Wednesday, 28. Apr 2021 09:45:51	administrator	Execution	Add object	r.hooch		Import	Success
Wednesday, 28. Apr 2021 09:45:51	administrator	Request	Add object	r.hooch		Import	
Wednesday, 28. Apr 2021 09:45:50	administrator	Execution	Add object	ch.burbage		Import	Success
Wednesday, 28. Apr 2021 09:45:50	administrator	Request	Add object	ch.burbage		Import	

Time ⓘ 4/28/21, 12:00 AM More... Basic

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Smaller Features and Improvements

- Unification of different "table" panels

- Search improvements

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	^ Name	Description		▾
☐	Cleanup	A system task that repeatedly checks for outdated objects (e.g.	Export Delete	

Options ☐ Use zip ☑ Show all items

Oid filter 🔍

Task ▾

Full text search 🔍

Basic
Advanced

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Options Use zip ☑ Show all items

Oid filter 🔍

Task ▾ Full text search 🔍 Basic
Advanced

☐ ⌃ Name Description ▾

☐ Cleanup A system task that repeatedly checks for outdated objects (e.g.

Options ☐ Use zip ☑ Show all items

Type Task ▾ Name ⓘ ✕ More... ▾ 🔍 Basic ▾

Options ☐ Use zip ☑ Show all items ▾

Oid ⓘ 🔍 Oid ▾

☐ ⌃ Name Description ▾

☐ Cleanup
00000000-0000-0000-0000-000000000005 A system task that repeatedly checks for outdated objects (e.g. closed tasks, old audit records) and removes them. Export Delete

☐ Import from HR
c87b3f74-551e-4832-a1b9-21ee48e651a0 Export Delete

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Smaller Features and Improvements

- Unification of different "table" panels

- Search improvements

- Password management

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Smaller Features and Improvements

- Unification of different "table" panels

- Search improvements

- Password management

- Configurable auditing

- JSON support in DB

- Preliminary results from midScale

    Schrödinger (experimental)

    Human-friendly query language (experimental)

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Schrödinger

- Testing framework for midPoint UI

- Built on top of Selenide framework

- Two basic modes of operation

    Deployment tests

    Development tests

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Schrödinger

```
ListUsersPage usersPage = basicPage.listUsers();
usersPage
        .table()
            .search()
                .byName()
                .inputValue(LOCALIZATION_TEST_USER_NAME_ORIG)
                .updateSearch()
            .and()
            .clickByName(LOCALIZATION_TEST_USER_NAME_ORIG)
                .assertName(LOCALIZATION_TEST_USER_NAME_DE);
```

Human-friendly Query Language

- Based on Axiom data modeling

- Replacement for XML-based query language

  For now, limited support, e.g. expressions not supported

- Examples:

  fullName = "John Doe"

  givenName startsWith "J"

  givenName not startsWith "J" and givenName != "John"

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name = 'a.dumbledore' or name startsWith 'a.s'

	Name	Given name	Family name	Full name	Email	Accounts	
☐	a.dumbledore	Albus	Dumbledore	Albus Dumbledore		2	
☐	a.sinistra	Aurora	Sinistra	Aurora Sinistra		2	
☐	a.spinnet						

eventStage != 'request' and eventType != 'createSession' and eventType != 'terminateSession'

Time	Initiator	Event Stage	Event Type	Target	Target owner	Channel	Outcome
Wednesday, 28. Apr 2021 09:45:54	administrator	Execution	Add object	p.pomfrey		Import	Success
Wednesday, 28. Apr 2021 09:45:54	administrator	Execution	Add object	i.pince		Import	Success
Wednesday, 28. Apr 2021 09:45:53	administrator	Execution	Add object	r.hagrid		Import	Success
Wednesday, 28. Apr 2021 09:45:53	administrator	Execution	Add object	a.filch		Import	Success

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Deprecation and Removals

- Reports based on Jasper are deprecated since 4.2, planned for removal in 4.4

- SQL/HQL for audit log queries/dashboards is deprecated since 4.2, planned for removal in 4.4

- Namespace item in ResourceType deprecated, planned for removal in 4.4

- Support for production deployments of midPoint in Microsoft Windows environment is deprecated, planned for removal in 4.4

- Microsoft Internet Explorer is no longer supported

- MySQL and MariaDB are not longer supported

- JMX-based node-to-node communication in midPoint cluster is deprecated

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Platforms

- Production deployment: Linux (x86_64)

  Support for Microsoft Windows Server is deprecated and planned for removal in 4.4

- Java 11

- Stand-alone deployment

  Explicit deployment to Tomcat is deprecated

- PostgreSQL is **strongly** recommended for new deployments

  Support for MySQL and MariaDB was dropped in 4.3

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Future of MidPoint Database Support

- PostgreSQL is the future

    PostgreSQL is **strongly recommended** for all new deployments.

    MySQL/MariaDB are no longer supported

    Oracle and MS SQL support is likely to be deprecated later.

- Why are we doing this?

    Provide better performance and (much) better scalability.

    Ability to take advantage database-specific features.

    Gain control of database schema (e.g. extension properties as native columns)

    Keep maintenance cost reasonable.

     (testing 5 database engines in 3 different versions is very expensive)

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Migration to Native PostgreSQL Repository

- Existing deployments not on PostgreSQL - Wait for 4.4

- Migration plan and guide from Evolveum

- Support for previous DB in 4.4

    Time for migration → 3 years

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MidPoint Studio 4.3 Released

- First officially supported release

- Available at JetBrains Marketplace

- Nice selection of interesting features

  Browse/Upload with raw options for both operations

  Properties can be used to replace parts of XML

  Properties can also be stored encrypted in keepass2 file within project

  XML tags autocompletion

  Links to documentation

  Groovy syntax highlighting and groovy code completion

  Groovy code common variables injection

  Object diff with option to ignore some parts of XML (matadata, id attributes, etc.)

  Simple OID generator

  Trace file viewer

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Plan for MidPoint 4.4

- LTS release

  3 years support period

- Planned release: autumn 2021

- Focus

  Performance and scalability

  GUI improvements

  LTS

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MidScale: MidPoint Scalability

- Target: tens of millions identities

- New repo implementation based on PostgreSQL

- Cluster management improvements

- Performance improvements

- GUI stabilization and speed-up

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MidPoint 4.4 Features

- LTS

  Dependency upgrades, schema cleanup, migration

  Mappings formalization

  Archetypes (OrgType, auxiliary)

  Reporting

- MidScale:

  New repository implementation (PostgreSQL) production quality

  Cluster management improvements

  Performance Improvements

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Future of MidPoint

- **MidPoint 4.5 Feature release** (spring 2022)

    Query language

    Axiom – data provenance

    ID Match

- **MidPoint 5.0** (after 2022, specific release date not known yet)

    Next generation schema support (XSD → Axiom)

    Stabilization for longevity and maintainability (Prism API, GUI API)

    Separate end-user GUI

    Plan is still quite fuzzy, gathering input

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Next Webinars

- Axiom Query Language

  12.5.2021 at 4PM CEST

- Asynchronous resources

  27.5.2021 at 4PM CEST

- Schrödinger

  9.6.2021 at 4PM CEST

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Discussion

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