

Identity and Access Management

DirX Roadmap

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1st Quarter 2023



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DirX: The integrated Product Suite for Identity and Access Management



DirX Identity



User and Access Management aligned with Business Processes

DirX Identity is a comprehensive, process-driven, customizable, multi-tenant, cloud-ready, scalable, and highly-available identity management solution for enterprises and organizations. It delivers overall risk-based identity and access governance functionality seamlessly integrated with provisioning.

DirX Audit



Analytics and Intelligence for Identity and Access Management

DirX Audit provides auditors, security compliance officers, and administrators with analytical insight and transparency for identity and access management. Based on historical identity data and recorded events from the identity and access management processes, DirX Audit allows answering the “what, when, where, who and why” questions.

DirX Access



Identity Federation, Access Management, and SSO for the Connected World

DirX Access is a comprehensive, cloud-ready, scalable, and highly available access management solution providing policy- and risk-based (context-aware) authentication incl. FIDO, authorization, and federation for web applications and services.

DirX Directory



High-end LDAP / X.500 Directory Server and LDAP Proxy

DirX Directory provides a standard-compliant, high-performance, highly available, highly reliable, highly scalable, and secure LDAP / X.500 Directory Server and LDAP Proxy. DirX Directory can act as the secure identity store for employees, customers, citizens, partners, subscribers, and other IoT entities.





- **Everything as a service**
Digital transformation changes enterprise IT to as-a-service model in the cloud



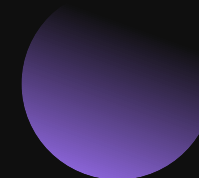
- **Modern IT architectures**
Microservices available to everyone and everything, secure, scalable and managed



- **The future will be API-based**
bridge between services, microservices and containers on prem and in the cloud



- **Identity expanding**
IAM is expanding beyond people in a single organization to partners, contractors, devices, things and services



- **Adaptive Authentication & MFA**
Adaptive Authentication and Multi Factor Authentication are key to enabling IAM to become more agile



- **Artificial Intelligence**
Current and future AI capabilities help to consume big data and make IAM decisions through powerful analytics

DirX - Secure Identities for Critical Infrastructures

State of the art IAM for on-premise or managed service deployment



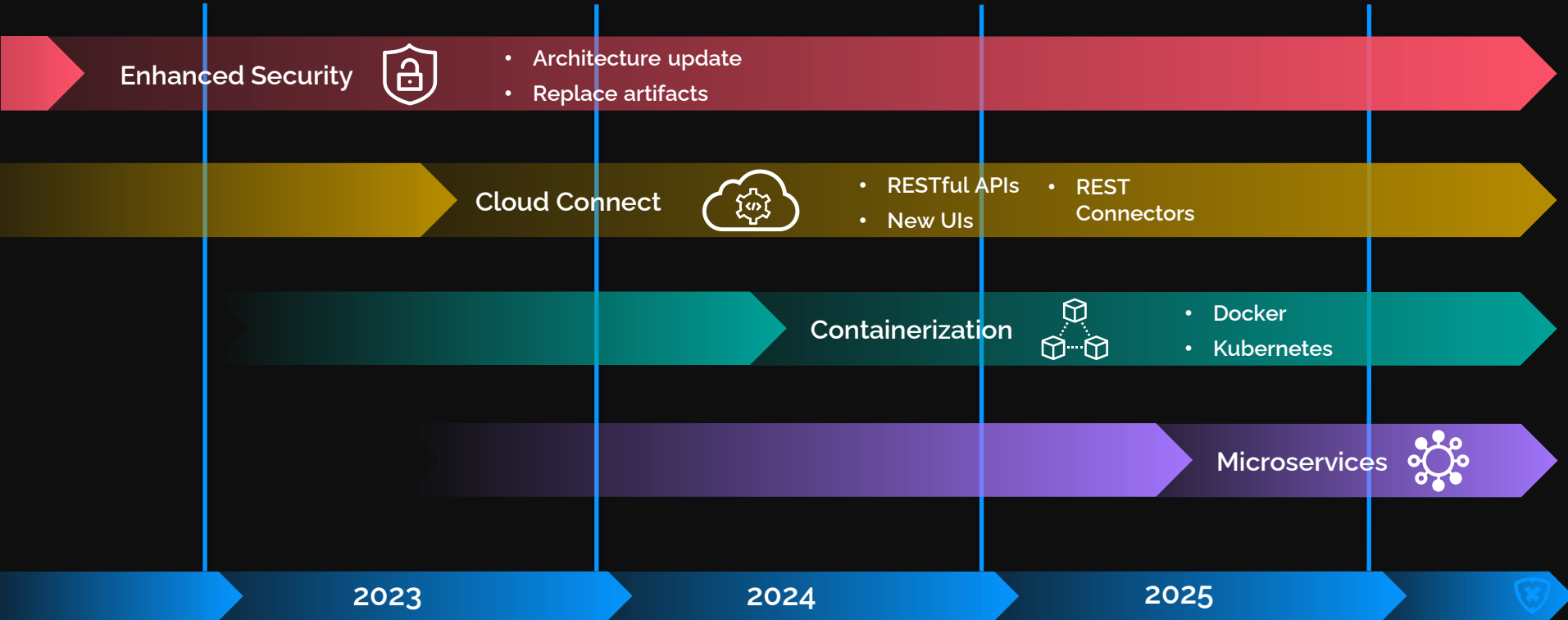
CyberSecurity & Sovereignty

Cloud Connect & Containerization

Zero Friction, Usability & Accessibility

DirX Products

Development pipelines



DirX Products

Timeline



DirX Identity



V8.10 Security and Resilience

V9.0 Enhanced Cloud Services

V9.1 Containerized Deployment

V10 Microservices

DirX Access



V9.1 Enhanced Serviceability New UI

V9.2 Containerized Deployment

V10 Microservices

DirX Audit



V7.2 Advanced Service Management

V9.0 Responsive User Interface

V9.1 Containerized Deployment

V10 Microservices

DirX Directory



V8.10 Advanced Proxy

V9.0 RESTful Interface

V9.1 Containerized Deployment

V10 Microservices

2023

2024

2025

current

in development

planned



DirX New UI Architecture – same for all products

DirX Angular



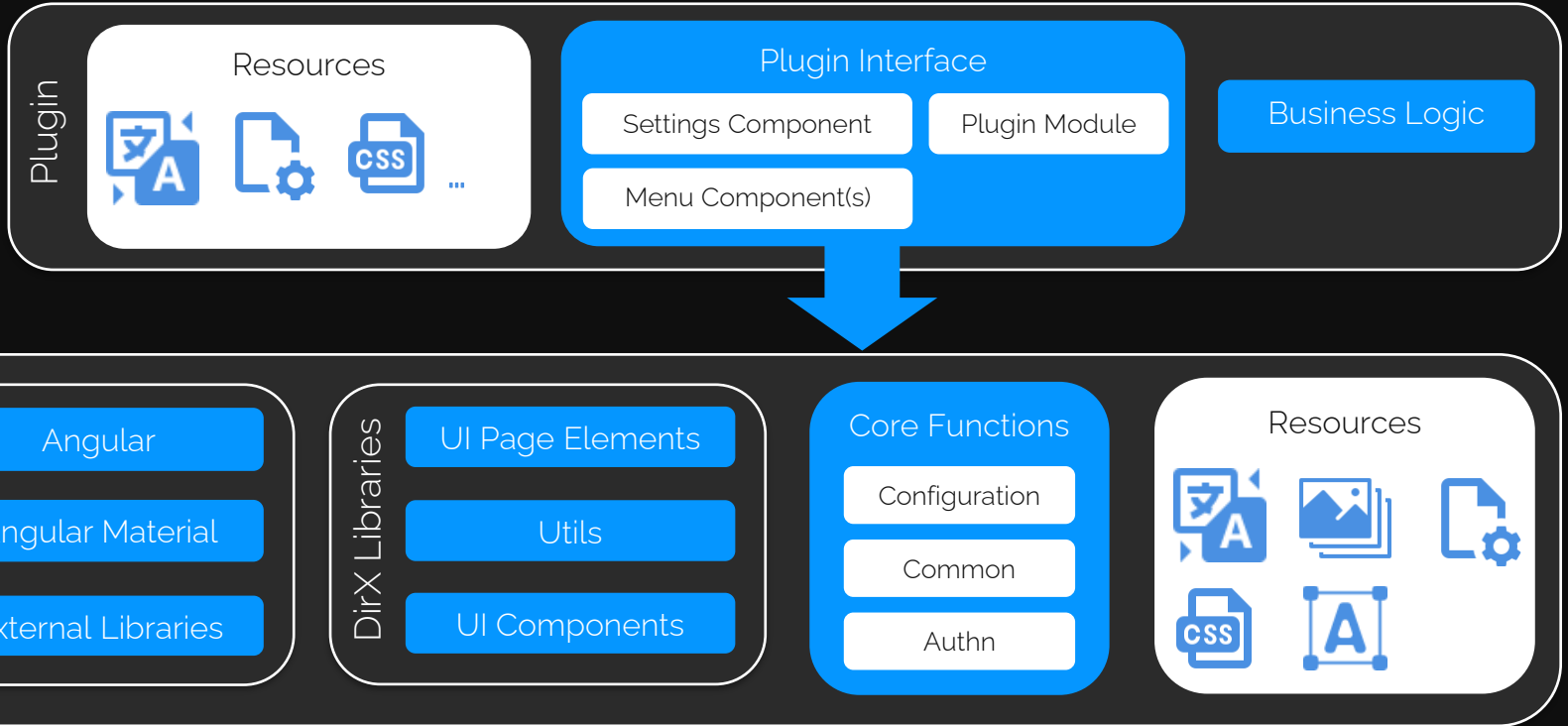
Common Look & Feel for all DirX products

- Modern html5 based, user-centric responsive design
- Based on RESTful APIs
- Different themes (light mode, dark mode)
- Assured Accessibility
 - Developed utilizing Web Content Accessibility Guide V2.1 (WCAG 2.1)
 - Target Level: AA (includes all Level A and Level AA requirements)
 - Considers all 50 requirements from BITV 2.0 and EN 301 549 V3.2.1
 - Tested against WCAG 2.1 with google lighthouse framework

DirX New UI Architecture – same for all products

DirX Angular Core App with Plugin-Interface for Applications

- BUI
- Manager
- Monitoring
- Yellow Pages





V8.10 – Security and Resilience

- Extension of RESTful API
- New Business User Interface functions
 - User Management
 - Certification Campaigns
 - More Authentication methods (OAuth2, DXA)
- Realtime IBM RACF Connector
- Email encryption, new Mail TS
- Improved LDAP locking
- Tec Update
 - ActiveMQ, Tomcat

V8.10 SP1: December 2022

V9.0 – Enhanced Cloud Services

- New Design for Manager Interface
- Extended BUI functions
 - BusinessObjects, Accounts
- Additional RESTful APIs
- Extended cloud integration
 - SCIM workflows
 - SAP Cloud connector
 - HCL Domino Keep connector
 - Azure AD connector
 - Microsoft Teams connector
- Customization decoupling

V9.1 – Containerized Deployment

- Update architecture to support containerization
- Easier deployment
- Better scalability due to modularization of components
- Automate server certificate handling

2023

2024

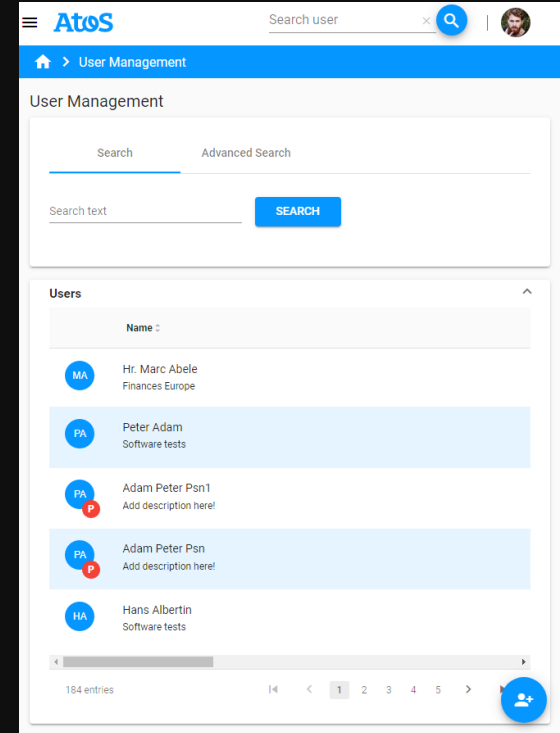
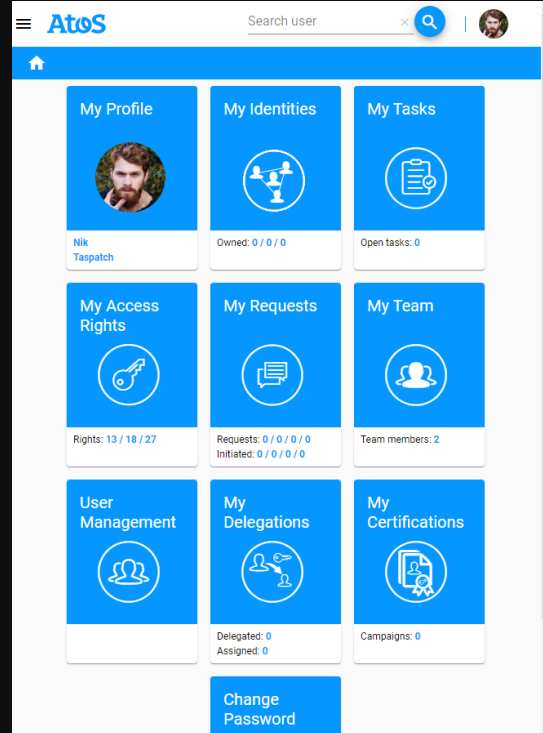
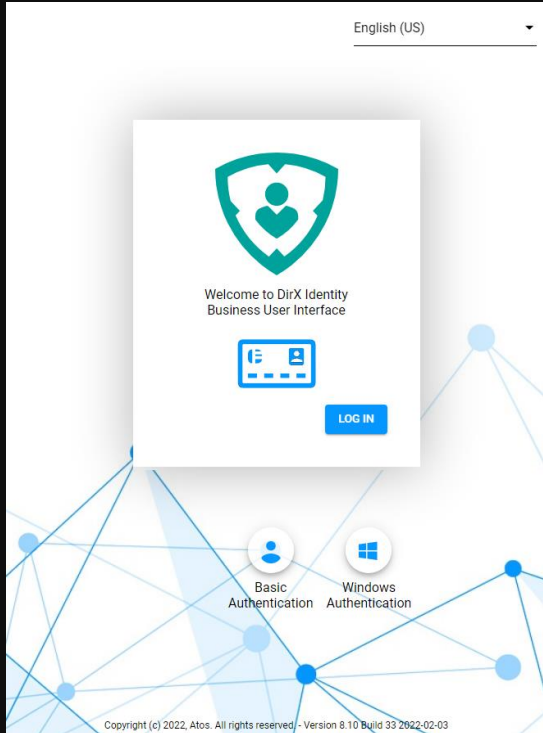
2025

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DirX Identity Business User Interface





Improved Design and **Accessibility** for DirX Identity Manager

- New Layout
- Graphics and Icons are now SVG
- New options in colors, properties to
 - Change color of fonts, icons and everything else
 - Change size of fonts and icons
 - Define and use variables for easier readability
- Different themes (light mode, dark mode)
- Easier to exchange graphics

DirX Identity Identity Manager Redesign



The screenshot displays the DirX Identity Manager interface, which is divided into several functional areas:

- Global View (Top):** Shows a tree structure with 'Scenarios' and 'Default' expanded. Under 'Default', there are options for 'ESSO Provisioning', 'Identity Store', 'Source Realtime', 'Source Scheduled', 'Target Realtime', and 'Target Scheduled'. A vertical sidebar on the left contains 'Provisioning' and 'Data View' sections.
- Connectivity (Middle):** A central area showing various data sources as yellow cylinders: 'SIFORT', 'JDBC', 'Medico', '(new)', 'EAD Work', 'ContiDB', 'Identity Store', and 'Foreign Sources'. Arrows indicate connections between these sources and the 'Creation Reports' section.
- Users (Bottom):** A detailed view of the 'Users' section for 'Domain: Identity, My-Company'. It includes a tree view on the left and a table of users. The user 'Morton Gabriela' is selected.

Name	Description	Status	Emp. Type	TBA	Country	Locality	Incons.	DN
Sales	Customer sales d...							ou=Sales, o=My-C...
Resources	Maintenance, Mecl...							ou=Resource, o=...
Professional	Professional ser...							ou=Professional S...
Product Test...	Product develop...							ou=Product Test...
Product Dev...	Product develop...							ou=Product Devel...
Procurement	Procurement dep...							ou=Procurement...
Errors								
Inconsistent								
Relative Time Constraint								
To Be Deleted								
ToDos								
Variable Time Constraint								
Finances	Finances depart...							
Morton Gab...	Assistant	ENABLED	Internal	false	DE	My-Company ...	false	cn=Morton Gabriela
Marketing	Marketing depart...							ou=Marketing, o=...
Hungs Oliver	General Manager	ENABLED	Internal	false	CA	My-Company ...	false	cn=Hungs Oliver, o...
Human Reso...	Human resources...							ou=Human Resou...
Global IT	Information Tech...							ou=Global IT, o=M...
Finances	Finances depart...							ou=Finances, o=M...

Morton Gabriela

Context: Assigned Roles, Assigned Permissions, Assigned Groups, Accounts, Orders, SoD Exceptions, Risk Parameters

General: Relationships, Representations, Operational, Communication, Authentication, Organization, Location

General

Name: Morton Gabriela

First Name: Gabriela Middle Name: Last Name: Morton

Salutation: Frau Title: Day of Birth: Jun 26, 1970

Gender: Female Employee Number: 6542 Identifier: Assistant

Categories: Edit Help





Federation, SSO, and Access Management

DirX Access



- **V9.1 – Enhanced Serviceability**
- RESTful APIs extensions
- New DirX Access Manager
 - responsive UI based on Angular
- Resilience against security attacks
 - Extensible CORS Handling (static → automated computation)
 - OAuth User Consent Extensions
 - Protection for Jetty 11 and Tomcat 10
- Session-less Deployment
 - with self-contained tokens
- Replace ConfigService by AppRepoService
- Configuration wizard with simple and expert mode

V9.2 – Containerized Deployment

- Support containerization
- RESTful API enhancements
- Enhanced features for new Angular management console
- Automate server certificate handling

V10 – Microservices

- Faster time to market for new features
- More agile updates
- High scalability
- Easy deployment
- Resilience, as services work independently

2023

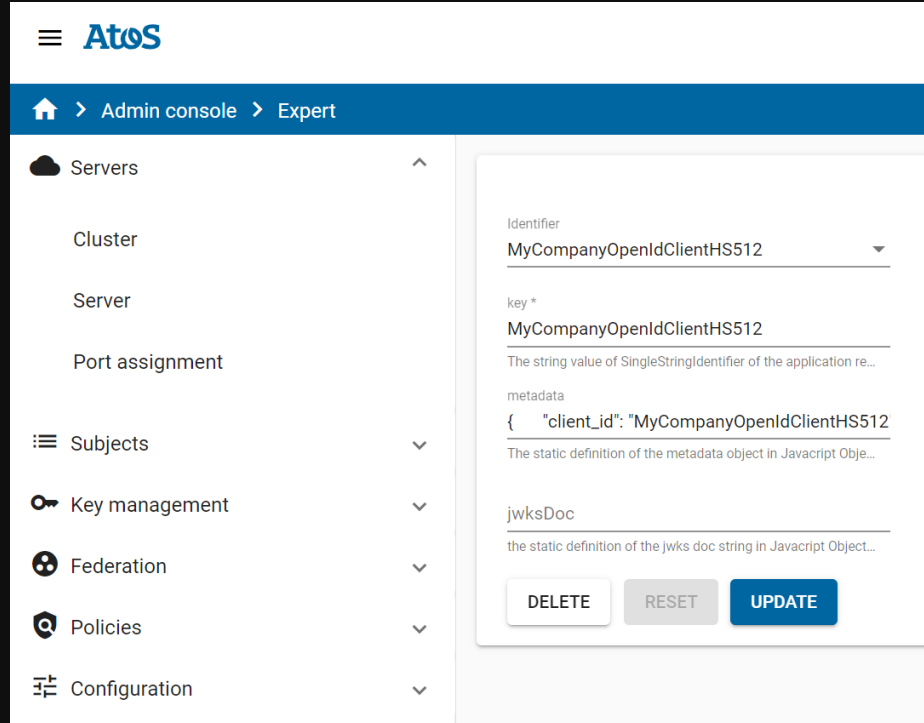
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The screenshot shows the Atos DirX Access Admin Console in the Expert view. The breadcrumb navigation is "Admin console > Expert". The left sidebar contains the following menu items: Servers (expanded), Cluster, Server, Port assignment, Subjects, Key management, Federation, Policies, and Configuration. The main content area displays the configuration for a client with the identifier "MyCompanyOpenIdClientHS512". The configuration fields are:

- Identifier: MyCompanyOpenIdClientHS512
- key *: MyCompanyOpenIdClientHS512
- metadata: {"client_id": "MyCompanyOpenIdClientHS512"}
- jwtDoc: (empty)

At the bottom of the configuration form are three buttons: DELETE, RESET, and UPDATE.



- **V7.2 – Advanced Service Management**
- Startup with systemd on Linux
- Audit Server
 - Based on Spring Boot technology
 - Separate services for each tenant
 - New History data synchronization job
- Additional business reports
- Privileges and Accounts in History View
- HistoryDB Export/Import Tool
- Database performance optimizations
- Tec Update
 - Windows Server 2022
 - Active MQ 5.17.2
 - Apache Camel 3.18

V9.0 – Responsive User Interface

- RESTful APIs
- New Audit Manager
 - Responsive user interface
- Audit Monitoring application
- Generic config of CSV reports
- Improve performance
 - Context calculation
 - Fact/Dimension population
 - Export with delete
- Tec Update
 - Java 17
 - Tomcat 10
 - SQL Server 2022

V9.1 – Containerized Deployment

- Support containerization
- RESTful API enhancements
- Enhanced features for new Angular management console
- Automate server certificate handling

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DirX Audit Audit Monitoring



The screenshot displays the Atos DirX Audit monitoring dashboard. The interface includes a top navigation bar with the Atos logo and user information (BT, Hr. Boris Tinker, broker-coors). The main area is a grid of dashlets:

- Jack Audit Server**: Status indicator (red with a crossed-out icon).
- Broker**: Status indicator (yellow with a crossed-out icon).
- Lion-Company Hist DB**: Status indicator (green with a chain icon).
- DirX Access server**: Status indicator (green with a chain icon).
- Service is stopped company Hist DB**: Status indicator (green with a chain icon).
- Octopus-Company Hist DB**: Status indicator (green with a chain icon).
- Broker enqueued/dequeued**: Bar chart showing message counts for My-Company: Dxa, My-Company: Dxt, and Lion-Company: Dxa.
- Broker pending messages**: Bar chart showing message counts for My-Company: Dxa and Lion-Company: Dxt.
- Dxl LDAP Collector - connection trend**: Line chart showing connection trends over time.
- Dxl LDAP Collector - events trend**: Line chart showing event trends over time.
- Audit server JVM - CPU Usage**: Line chart showing CPU usage percentage over time.
- Audit server JVM - Memory Usage**: Line chart showing memory usage in MB over time.
- Import events failures**: Pie chart showing the distribution of failure types, with a label for 'Wrong input format'.
- Collectors received events**: Bar chart showing event counts for various collectors.
- Dxl JMS Collector - connection trend**: Line chart showing connection trends over time.

A **Dashlet settings** dialog box is open, showing configuration for the **mBean definition** dashlet. The settings include:

- Datasource**: mBean definition
- Type**: mBean settings
- Properties**: +
- Attributes**: +
- Enqueued**: -
- Dequeued**: -
- Layout settings**: Chart type: Bar





V8.10 – Advanced Proxy

- Additional LDAP Proxy features
 - Multiple sources
- Improved operation support
 - Attribute value paging
 - New dirxcp -control option for LDAP controls
 - tunneling dirxadm RPC operations
 - Advanced schema naming validation
- Enhanced Diagnostics and logging
- Additional documentation
- Tec Update
 - Support SELinux in unconfined mode

V9.0 – RESTful Interface, Cloud Support

- New Design for Manager Interface
- RESTful APIs
- Angular based User Interface utilizing RESTful APIs for
 - Search, List, View LDAP objects
 - Add, Modify, Delete LDAP objects
- Customization decoupling
- Tec Update
 - New SLES and RHEL Linux versions

V9.1 – Containerized Deployment

- Support containerization
- RESTful API enhancements
- Enhanced features for new Angular User Interface
- Advanced monitoring / diagnostic
- Automate server certificate handling

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DirX Directory

REST-based Corporate Directory Web-Frontend



Corporate Directory NS Name Surname loginName

Extended Search | Expert Search | Search Result Quick Search

Personal Information

Given name starts with

Surname starts with

Initials starts with

Communication Information

Email starts with

Fax Number equals

Phone Number equals

Company Information

Department starts with

Locality starts with

Manager equals

Secretary equals

Evidian IAM Solutions

Full Choice of Delivery and Support Options



On-Premises



Managed Service



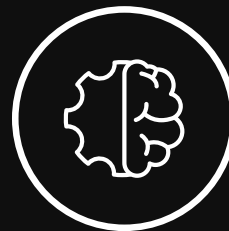
as a Service



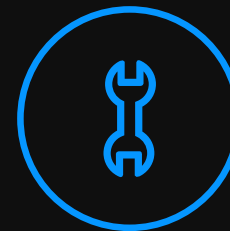
Consulting



Professional Services



Training



Support

Server Platforms



Runs natively

x32 Contains 32-bit components

Operating System	Bit	DirX Audit			DirX Identity			DirX Access				DirX Directory		
		7.1	7.2	9.0	8.9	8.10	9.0	8.9	8.10	9.0	9.1	8.9	8.10	9.0
Microsoft Windows Server 2016 (x86-64)	64				x32	x32								
Microsoft Windows Server 2019 (x86-64)	64				x32	x32	x32							
Microsoft Windows Server 2022 (x86-64)	64					x32	x32							
Red Hat Enterprise Linux 7 AP (x86-64)	64				x32	x32	x32							
Red Hat Enterprise Linux 8 AP (x86-64)	64					x32	x32							
Red Hat Enterprise Linux 9 AP (x86-64)	64						x32							
SuSE Linux Enterprise Server 12 (x86-64)	64				x32	x32	x32							
SuSE Linux Enterprise Server 15 (x86-64)	64					x32	x32							
Virtualization														
VMWare		VMWare ESXi, in combination with the guest operating systems listed above and that are supported by VMWare ESXi												

Supported Repositories

Directory Server		DirX Identity			DirX Access*			
		8.9	8.10	9.0	8.9	8.10	9.0	9.1
DirX Directory	V8.9	Supported	Supported	Supported	Supported	Supported	Supported	Supported
	V8.10	Supported	Supported	Supported	Supported	Supported	Supported	Supported
	V9.0	Supported	Not Supported	Supported	Supported	Supported	Supported	Supported
Microsoft Windows	2016 AD DS	Supported	Supported	Supported	Supported	Supported	Supported	Not Supported
	2016 AD LDS	Supported	Supported	Supported	Supported	Supported	Supported	Not Supported
	2019 AD DS	Supported	Supported	Supported	Supported	Supported	Supported	Supported
	2019 AD LDS	Supported	Supported	Supported	Supported	Supported	Supported	Supported
	2022 AD DS	Supported	Supported	Supported	Supported	Supported	Supported	Supported
	2022 AD LDS	Supported	Supported	Supported	Supported	Supported	Supported	Supported

DirX Access *)

- for DirX Access configuration and policy Data DirX Directory and AD are supported
- For user data, any LDAPv3 compliant directory is supported

 Supported

Database		DirX Audit		
		7.1	7.2	9.0
MS SQL	2016	Supported	Supported	Supported
	2017	Supported	Supported	Supported
	2019	Supported	Supported	Supported
	2022	Supported	Supported	Supported
Oracle	12c	Supported	Supported	Supported
	18c	Supported	Supported	Supported
	19c	Supported	Supported	Supported

End of Software Maintenance Planned



Product Version	Date of General Availability	End of Software Maintenance
DirX Audit V7.1	July 2020	July 31, 2023
DirX Audit V7.2	December 2022	December 31, 2025
DirX Identity V8.9	July 2019	December 31, 2023
DirX Identity V8.10	February 2022	February 28, 2025
DirX Access V8.9	June 2019	June 30, 2023
DirX Access V8.10	December 2019	June 30, 2023
DirX Access V9.0	July 2021	July 31, 2024
DirX Access V9.1	December 2022	December 31, 2025
DirX Directory V8.9	August 2020	December 31, 2023
DirX Directory V8.10	April 2022	April 30, 2025

End of Software Maintenance Reached

- All listed versions have reached end of life
- All previous versions have reached end of life, too

Product Version	Date of General Availability	End of Life
DirX Audit V7.0	June 2018	June 30, 2022
DirX Identity V8.7	December 2019	March 31, 2022
DirX Access V8.7	December 2017	December 31, 2021
DirX Directory V8.7	December 2018	September 30, 2022

Thank you!

For more information please contact:

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