



# Connector Release Notes

/ ForgeRock Identity Management 7.1

Latest update: 7.1.4

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## Abstract

Release notes for the connectors that are supported with ForgeRock® Identity Management software. These release notes cover changes to each supported connector that has been released since IDM 6.5.0.



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# Overview

These release notes cover the ICF connector releases that are supported in a deployment of ForgeRock Identity Management.

## Quick Start



### Connectors Overview

Lists the ICF connector releases.



### ICF Releases

Lists the releases of the ForgeRock Open Connector Framework.

The releases listed in this document cover the connectors that have had a release since IDM 6.5. In most cases, these releases are backwards compatible with previous versions of IDM. Check the "IDM / ICF Compatibility Matrix" in the *Release Notes* for your version of IDM for compatibility before installing a new version of a connector.

This document does not describe all ICF connectors. Additional connectors are available from the ForgeRock BackStage download site. If a connector release is listed here but is not yet on the site, contact ForgeRock Support for access.

ForgeRock Identity Platform™ serves as the basis for our simple and comprehensive Identity and Access Management solution. We help our customers deepen their relationships with their customers, and improve the productivity and connectivity of their employees and partners. For more information about ForgeRock and about the platform, see <https://www.forgerock.com>.

The ForgeRock Common REST API works across the platform to provide common ways to access web resources and collections of resources.

## Chapter 1

# Connector Release Notes Overview

### Note

Starting in version 1.5.18.0, the ICF Connector Framework and all connectors bundled with IDM or the Remote Connector Server share a unified version number.

### Recently Updated Connectors

Connector	Version	Date
Remote Connector Server (RCS)	1.5.20.12	2022/12/09
AS400 Connector	1.5.20.12	2022/12/09
Google Apps Connector	1.5.20.12	2022/12/09
LDAP Connector	1.5.20.12	2022/12/09
PeopleSoft Connector	1.5.20.12	2022/12/09
SAP Connector	1.5.20.12	2022/12/09
SAP SuccessFactors Connector	1.5.20.12	2022/12/09
SCIM Connector	1.5.20.12	2022/12/09
Workday Connector	1.5.20.12	2022/12/09
ICF Connector Framework	1.5.20.11	2022/11/11
Remote Connector Server (RCS)	1.5.20.11	2022/11/11
Adobe Marketing Cloud Connector	1.5.20.11	2022/11/11
AWS Connector	1.5.20.11	2022/11/11
Box Connector	1.5.20.11	2022/11/11
Cerner Connector	1.5.20.11	2022/11/11
CSV Connector	1.5.20.11	2022/11/11
DocuSign Connector	1.5.20.11	2022/11/11
Epic Connector	1.5.20.11	2022/11/11
GCP Connector	1.5.20.11	2022/11/11
Google Apps Connector	1.5.20.11	2022/11/11
HubSpot Connector	1.5.20.11	2022/11/11
IBM RACF Connector	1.5.20.11	2022/11/11

Connector	Version	Date
LDAP Connector	1.5.20.11	2022/11/11
Marketo Connector	1.5.20.11	2022/11/11
Microsoft Graph API Connector	1.5.20.11	2022/11/11
PeopleSoft Connector	1.5.20.11	2022/11/11
Salesforce Connector	1.5.20.11	2022/11/11
SAP S/4HANA Connector	1.5.20.11	2022/11/11
SAP SuccessFactors Connector	1.5.20.11	2022/11/11
SCIM Connector	1.5.20.11	2022/11/11
Scripted Rest Connector	1.5.20.11	2022/11/11
ServiceNow Connector	1.5.20.11	2022/11/11
Workday Connector	1.5.20.11	2022/11/11
LDAP Connector	1.5.20.9	2022/09/09
Microsoft Graph API Connector	1.5.20.9	2022/09/09
SAP Connector	1.5.20.9	2022/08/08
ICF Connector Framework	1.5.20.8	2022/08/08
Remote Connector Server (RCS)	1.5.20.8	2022/08/08
CSV Connector	1.5.20.8	2022/08/08
Database Table Connector	1.5.20.8	2022/08/08
Google Apps Connector	1.5.20.8	2022/08/08
LDAP Connector	1.5.20.8	2022/08/08
Microsoft Graph API Connector	1.5.20.8	2022/08/08
PeopleSoft Connector	1.5.20.8	2022/08/08
Salesforce Connector	1.5.20.8	2022/08/08
Scripted SQL Connector	1.5.20.8	2022/08/08
ICF Connector Framework	1.5.20.7	2022/06/06
Remote Connector Server (RCS)	1.5.20.7	2022/06/06
AWS Connector	1.5.20.7	2022/06/06
Database Table Connector	1.5.20.7	2022/06/06
Google Apps Connector	1.5.20.7	2022/06/06
LDAP Connector	1.5.20.7	2022/06/06
MongoDB Connector	1.5.20.7	2022/06/06
PeopleSoft Connector	1.5.20.7	2022/06/06
Salesforce Connector	1.5.20.7	2022/06/06

Connector	Version	Date
SAP S/4HANA Connector	1.5.20.7	2022/06/06
Scripted SQL Connector	1.5.20.7	2022/06/06
ICF Connector Framework	1.5.20.6	2022/05/09
Remote Connector Server (RCS)	1.5.20.6	2022/05/09
Cerner Connector	1.5.20.6	2022/05/09
Epic Connector	1.5.20.6	2022/05/09
Google Apps Connector	1.5.20.6	2022/05/09
LDAP Connector	1.5.20.6	2022/05/09
MongoDB Connector	1.5.20.6	2022/05/09
ICF Connector Framework	1.5.20.5	2021/02/23
Remote Connector Server (RCS)	1.5.20.5	2021/02/23
Adobe Marketing Cloud Connector	1.5.20.5	2021/02/23
Database Table Connector	1.5.20.5	2021/02/23
Epic Connector	1.5.20.5	2021/02/23
Google Apps Connector	1.5.20.5	2021/02/23
LDAP Connector	1.5.20.5	2021/02/23
Marketo Connector	1.5.20.5	2021/02/23
Salesforce Connector	1.5.20.5	2021/02/23
SCIM Connector	1.5.20.5	2021/02/23
Scripted REST Connector	1.5.20.5	2021/02/23
Scripted SQL Connector	1.5.20.5	2021/02/23
ICF Connector Framework	1.5.20.4	2021/12/08
Remote Connector Server (RCS)	1.5.20.4	2021/12/08
Google Apps Connector	1.5.20.4	2021/12/08
MS Graph API Connector	1.5.20.4	2021/12/08
ICF Connector Framework	1.5.20.3	2021/11/22
Remote Connector Server (RCS)	1.5.20.3	2021/11/22
Database Table Connector	1.5.20.3	2021/11/22
Google Apps Connector	1.5.20.3	2021/11/22
LDAP Connector	1.5.20.3	2021/11/22
Scripted SQL Connector	1.5.20.3	2021/11/22
ServiceNow Connector	1.5.20.3	2021/11/22
Workday Connector	1.5.20.3	2021/11/22

Connector	Version	Date
Remote Connector Server (RCS)	1.5.20.2	2021/07/30
LDAP Connector	1.5.20.2	2021/07/30
Workday Connector	1.5.20.2	2021/07/30
CSV Connector	1.5.20.2	2021/07/30
MS Graph API Connector	1.5.20.2	2021/07/30
Database Table Connector	1.5.20.1	2021/05/28
ICF Connector Framework and Connectors	1.5.20.0	2021/04/09
ICF Connector Framework and Connectors	1.5.19.6	2021/02/26
ICF Connector Framework and Connectors	1.5.19.5	2021/02/12
ICF Connector Framework and Connectors	1.5.19.4	2021/01/22
ICF Connector Framework and Connectors	1.5.19.3	2020/12/13
ICF Connector Framework and Connectors	1.5.19.2	2020/11/30
ICF Connector Framework and Connectors	1.5.19.1	2020/11/18
ICF Connector Framework and Connectors	1.5.19.1	2020/10/20
ICF Connector Framework	1.5.18.0	2020/09/14
Adobe Campaign Manager Connector	1.5.18.0	2020/09/14
CSV File Connector	1.5.18.0	2020/09/14
Database Table Connector	1.5.18.0	2020/09/14
Google Apps Connector	1.5.18.0	2020/09/14
Groovy Connector Toolkit	1.5.18.0	2020/09/14
Kerberos Connector	1.5.18.0	2020/09/14
LDAP Connector	1.5.18.0	2020/09/14
Marketo Connector	1.5.18.0	2020/09/14
MongoDB Connector	1.5.18.0	2020/09/14
Salesforce Connector	1.5.18.0	2020/09/14
SCIM Connector	1.5.18.0	2020/09/14
Scripted REST Connector	1.5.18.0	2020/09/14
Scripted SQL Connector	1.5.18.0	2020/09/14
ServiceNow Connector	1.5.18.0	2020/09/14
SSH Connector	1.5.18.0	2020/09/14
Workday Connector	1.5.18.0	2020/09/14
ICF Connector Framework	1.5.17.1	2020/09/09
ICF Connector Framework	1.5.17.0	2020/08/25



Connector	Version	Date
Workday Connector	1.5.3.0	2020/08/24
ICF Connector Framework	1.5.16.0	2020/08/21
Adobe Campaign Manager Connector	1.5.4.0	2020/08/21
CSV File Connector	1.5.7.0	2020/08/21
Database Table Connector	1.5.3.0	2020/08/21
Google Apps Connector	1.4.9.0	2020/08/21
Groovy Connector Toolkit	1.5.7.0	2020/08/21
Kerberos Connector	1.5.5.0	2020/08/21
LDAP Connector	1.5.5.0	2020/08/21
Marketo Connector	1.5.4.0	2020/08/21
MongoDB Connector	1.5.6.0	2020/08/21
Salesforce Connector	1.5.7.0	2020/08/21
SCIM Connector	1.5.8.0	2020/08/21
Scripted REST Connector	1.5.6.0	2020/08/21
Scripted SQL Connector	1.5.5.0	2020/08/21
ServiceNow Connector	1.5.5.0	2020/08/21
SSH Connector	1.5.6.0	2020/08/21
SCIM Connector	1.5.2.0	2020/03/12
LDAP Connector	1.5.1.0	2020/02/18
ServiceNow Connector	1.5.1.0	2020/02/12
Salesforce Connector	1.5.3.0	2020/02/12
Salesforce Connector	1.5.2.0	2019/12/11
Database Table Connector	1.4.4.0	2019/11/07
Workday Connector	1.5.1.0	2019/10/18
Generic LDAP Connector	1.5.0.0	2019/10/04
Google Apps Connector	1.4.7.0	2019/09/27
Workday Connector	1.4.1.0	2019/09/27
Database Table Connector	1.4.3.0	2019/09/25
Connector Framework	1.5.9.0	2019/08/28
Database Table Connector	1.4.2.0	2019/08/22
Scripted REST Connector	1.5.2.0	2019/07/01
Scripted CREST Connector	1.5.2.0	2019/06/28
Connector Framework	1.5.8.0	2019/06/27

Connector	Version	Date
Connector Framework	1.5.7.0	2019/06/26
Groovy Connector Toolkit	1.5.2.0	2019/06/28
Salesforce Connector	1.5.1.0	2019/06/26
Generic LDAP Connector	1.4.11.0	2019/06/18
SCIM Connector	1.5.1.0	2019/05/15
Workday Connector	1.5.0.0	2019/05/15
Google Apps Connector	1.4.6.0	2019/05/10
Google Apps Connector	1.4.5.0	2019/04/30
SCIM Connector	1.5.0.0	2019/04/30
Generic LDAP Connector	1.4.10.0	2019/03/21
Generic LDAP Connector	1.4.9.0	2019/02/26
Connector Framework	1.5.6.0	2018/12/03
Adobe Campaign Manager Connector	1.5.2.0	2018/12/03
CSV File Connector	1.5.4.0	2018/12/03
Database Table Connector	1.4.1.0	2018/12/03
Google Apps Connector	1.4.4.0	2018/12/03
Groovy Connector Toolkit	1.5.1.0	2018/12/03
Kerberos Connector	1.5.1.0	2018/12/03
Generic LDAP Connector	1.4.8.0	2018/12/03
Marketo Connector	1.5.1.0	2018/12/03
MongoDB Connector	1.5.1.0	2018/12/03
Powershell Connector	1.4.6.0	2018/12/03
Salesforce Connector	1.5.0.0	2018/12/03
SCIM Connector	1.4.3.0	2018/12/03
Scripted CREST Connector	1.5.1.0	2018/12/03
Scripted REST Connector	1.5.1.0	2018/12/03
Scripted SQL Connector	1.5.1.0	2018/12/03
SSH Connector	1.5.1.0	2018/12/03
HubSpot Connector	1.5.0.0	2018/11/27
SAP Connector	1.5.0.0	2018/09/05
ServiceNow Connector	1.5.0.0	2018/09/05
Workday Connector	1.4.0.0	2018/09/05

## Chapter 2

# Connector Framework

### 1.5.20.11

No public changes were made to the framework, though a new version was released.

### 1.5.20.8

- OPENICF-1998: Local/RemoteRequest congruence checks should throw a retryable exception upon failure

### 1.5.20.7

- OPENICF-1883: Java RCS: Improve stability of RCS WebSocket connection management

### 1.5.20.6

- OPENIDM-17535: IDM stack releases that include bundled connectors should continue to work with existing provisioner configuration

### 1.5.20.5

- OPENICF-1855: Investigate handling query 'poison pill' termination via recon automatic retry upon exception receipt

### 1.5.20.4

No public changes were made to the framework, though a new version was released.

### 1.5.20.3

- OPENICF-1704: Framework: resetConnectorInfos does not implement intent
- OPENICF-1730: Client ConnectorInfos cache not refreshed upon RCS instance restart when using RCS Agent
- OPENICF-1735: Upgrade to groovy 3.0.9

### 1.5.20.0

- OPENICF-1366: Java Connector Server: /setDefault does not revert config to default properly
- OPENICF-1502: RCS: requests not cancelled when websocket closes

- OPENICF-1538: MS Graph API Connector: Sync() does not work
- OPENICF-1540: RCS: requests bearer token from AM, but doesn't look for error status code in response
- OPENICF-1541: MS Graph API Connector: Add ConsistencyLevel: eventual' header and \$count=true for endsWith filter
- OPENICF-1544: Fix double-checked locking in WebSocketConnectionGroup
- OPENICF-1549: Update default ConnectorServer.properties
- OPENICF-1550: RCS Agent: improve tracking sync request/responses
- OPENICF-1552: RCS Agent files available for customers to create their own Docker image
- OPENICF-1553: MongoDB Connector: convertBSONtoICF() does not traverse Arrays.
- OPENICF-1555: Clarify locking behavior in ConnectorServer for Grizzly server lifecycle
- OPENICF-1557: MS Graph API Connector: Handle user employeeHireDate attribute and Calendar data type
- OPENICF-1558: MS Graph API Connector: Make sure sortKey is supported by the objectClass
- OPENICF-1559: MS Graph API Connector: Implement Authenticate() call
- OPENICF-1561: RCS: Reduce log level for common debug messages
- OPENICF-1563: RCS Agent: update Maven dependencies
- OPENICF-1566: Framework: ICF Jetty servlet default maxMessageSize is too small
- OPENICF-1586: LDAP Connector: Timestamp sync strategy: Synchronization filters are not used properly
- OPENICF-1589: SCIM Connector: NPE caused by exception not properly handled
- OPENICF-1591: SCIM Connector: Parsing OAuth response should not fail on unknown properties
- OPENICF-1595: MS Graph API Connector: test() should connect to the MS Graph endpoint to validate the connection
- OPENICF-1598: SCIM Connector: NPE when updating attribute with null value
- OPENICF-1600: SCIM Connector: unknown attributes in a query result should not throw parsing exception
- OPENICF-1601: SCIM Connector: Implement a global connection timeout property

- OPENICF-1560: LDAP Connector: RFE Disable Paged Results Control

**Note**

For a list of security issues addressed in this release, see the related Security Advisory in the ForgeRock Knowledge Base.

**1.5.19.6**

- OPENIDM-16178: IDM recon would fail w/ remote Java connector server

**1.5.19.5**

- OPENICF-1493: MS Graph API Connector: add the ability to read/assign license for the user
- OPENICF-1504: Workday Connector: SyncToken should be updated even if no events
- OPENICF-1506: Workday Connector: SyncToken should be set to tenant timestamp after call to sync()
- OPENICF-1507: MS Graph API Connector: add the ability to read subscribedSku object
- OPENICF-1508: Workday Connector: Query on SCR objects should not include date range as a search criteria
- OPENICF-1510: Errors in Database Table Connector docs
- OPENICF-1516: Failed ICF Search Query confuses total number of search results
- OPENICF-1518: SCIM connector: Http client ConnectionManager is not set properly
- OPENICF-1520: Java RCS: Connection groups can accumulate many more websockets than they should have
- OPENICF-1522: Salesforce Connector : implement StatefulConfiguration to allow persistence of accessToken in memory
- OPENICF-1523: ScriptedGroovy connectors fail to load in IDM 7.x when embedded Groovy version does not match IDM Groovy version
- OPENICF-1525: MS Graph API Connector: replace the default Graph SDK logger
- OPENICF-1526: MS Graph API Connector: add the ability to read Team objects
- OPENICF-1530: system?\_action=createFullConfig validation does not return consistent errors
- OPENICF-1533: RCS Agent: RCS to not send "connection closing soon" error when Host ID is set
- OPENICF-1499: MS Graph API Connector: remove the maximumConnections property

#### 1.5.19.4

- OPENICF-1486: Java RCS: Connection housekeeping task may stop running
- OPENICF-1494: Java RCS: Housekeeping task gets blocked
- OPENICF-1497: RCS Agent: IDM connection cannot be resumed after period of time
- OPENICF-1500: Java RCS: Improve default logging
- OPENICF-1485: Java RCS: Non operational ConnectionGroup should be closed and removed

#### 1.5.19.3

- OPENICF-1475: MS Graph API Connector: the 'manager' only returns the id and not the full object
- OPENICF-1481: MS Graph API Connector: add the ability to assign/remove user's manager
- OPENICF-1482: Java RCS: fails to reestablish connections to IDM after IDM is restarted
- OPENICF-1483: MS Graph API Connector: can't remove all groups a user belongs to
- OPENICF-1471: Salesforce Connector: should not implement PoolableConnector interface

#### 1.5.19.2

- OPENICF-1448: LDAP Connector: Enabling changelog livesync for oracle unified directory (OUD)
- OPENICF-1466: LDAP Connector: Update filterWithOrInsteadOfAnd to apply to timestamp and Active Directory liveSync
- OPENICF-1467: RCS: endless loops on connection loss and shutdown
- OPENICF-1469: MS Graph API Connector: implement a read/write rate limiter
- OPENICF-1472: LDAP Connector: Data not synced from AD to IDM via livesync on `__ALL__` object
- OPENICF-1401: SCIM Connector: Align exceptions for not configured (blank/null) configurationProperties
- OPENICF-1470: LDAP Connector: Null Check in ADUserAccountControl.addControl

#### 1.5.19.1

- OPENICF-1352: Salesforce connector: pagination and cookies not working properly
- OPENICF-1383: Workday Connector: Upgrade to API v35.0
- OPENICF-1419: Workday Connector: Implement Service Center Representative object type

- OPENICF-1426: Workday Connector: Ability to update email for Service Center Representative object
- OPENICF-1432: Workday Connector: Implement OR filter
- OPENICF-1433: SSH connector: Kerberos username prompt for public key and password auth
- OPENICF-1444: SCIM connector - provide support for 'scope'
- OPENICF-1445: SSH connector: Stale or disconnected SSH sessions are not detected when borrowing from the pool
- OPENICF-1446: MS Graph API Connector: implement PoolableConnector
- OPENICF-1447: Workday Connector: add the Contingent\_Worker\_ID as a search criteria

### 1.5.19.0

#### Note

Starting in version 1.5.19.0, ICF connectors that previously had external library dependencies now have those dependencies bundled inside the connector.

- OPENICF-1388: LDAP Connector 1.5.5.0 throws java.lang.NoSuchMethodError on Java 8
- OPENICF-1393: Java Connector Server: useSSL property use should be clarified
- OPENICF-1394: missing connectorserver.scope in connectorserver property file
- OPENICF-1395: Investigate and clean up the following start up error message
- OPENICF-1396: OPENIDM-15448 changes seemingly broke querying ldap via the data tab
- OPENICF-1397: Java Connector Server: javax.net.ssl trustStore and keyStore properties should be set
- OPENICF-1399: restarting IDM with active RCS causes RCS to decrement websocket connection count
- OPENICF-1400: Java Connector Server: Property name usessl should match docs and code
- OPENICF-1404: Java connector server proxy config for port is incorrect
- OPENICF-1408: Java RCS: NPE when we set proxyHost for client mode
- OPENICF-1413: Use framework version 1.5.11.0 for ldap-connector to support Java8-compatible release
- OPENICF-1414: Scripted Groovy (v3) based connectors fail to load with IDM releases prior to 7.0

- OPENICF-1407: Java RCS: Incorrect url in Debug message of HttpRequestPacket header for non-SSL

### 1.5.18.0

#### Note

Starting in version 1.5.18.0, the ICF Connector Framework and all connectors bundled with IDM share a unified version number.

- OPENICF-1392: Java Connector Server: TTL should be in seconds
- OPENICF-1390: Java RCS: Prevent use of websockets that are about to be closed
- OPENICF-1371: Java Connector server does not always reestablish closed websockets

### 1.5.17.1

Version 1.5.17.1 is bundled with the IDM 7.0.1 release.

- OPENICF-1379: Java RCS: Staggered connection starts, if webSocketConnections > 1

### 1.5.17.0

- OPENICF-1378: Java RCS: Connection TTL should be in minutes, not hours
- OPENICF-1375: Java RCS: Add the ability to connect to multiple IDM endpoints
- OPENICF-1373: Java RCS: default connectorserver.connectionTtl breaks the connection housekeeping

### 1.5.16.0

Version 1.5.16.0 is bundled with the IDM 7.0.0 release.

- OPENICF-1345: Framework: Compilation errors with FR Commons 26.0.0-20200630110301-422ca12
- OPENICF-1289: Framework: ConnectorObject should default the Name to Uid if Name is not present
- OPENICF-1288: Framework: upgrade all connectors to latest for jdk11/groovy3 move
- OPENICF-1259: Framework: use FR parent variables for maven plugins version
- OPENICF-1255: Framework: upgrade to latest forgerock-parent 4.0.5
- OPENICF-1206: Framework: upgrade protobuf dep to 3.10.0
- OPENICF-1202: Framework: Docker - Connector Server should embed a set of default connectors



- OPENICF-1200: Framework: project modules should not depend on maven profiles
- OPENICF-1196: Framework: Docker - Connector Server should be able to read System properties over Config properties
- OPENICF-1186: Framework: Build Docker image for Java Connector Server
- OPENICF-1185: Framework: Remove reference to Grizzly version
- OPENICF-1184: Framework: Comment properties that have a default value in ConnectorServer.properties
- OPENICF-1182: Framework: ConnectorException thrown by config properties not properly set
- OPENICF-1179: Framework: availableConnectors are not updated after remote ICF shut down
- OPENICF-1177: Framework: PoolableConnector instances that have been idle for too long should be disposed
- OPENICF-1173: Framework: decrease log level of LittleProxy module
- OPENICF-1172: Framework: reactivate commented unit test for connector-server-grizzly module
- OPENICF-1169: Framework: upgrade openicf maven plugin and forgerock-parent version

#### 1.5.9.0

- OPENICF-1157: Framework: ICF servlet should verify valid RCS names is not null or empty
- OPENICF-1151: Framework: Refactor LoadBalancingConnectorInfoManager
- OPENICF-1142: JCS Client mode: Valid Connector Server name should be enforced in the ICF servlet
- OPENICF-1141: JCS Client mode: Handshake negotiation pause is never used

#### 1.5.8.0

- OPENICF-1122: Update ICF to commons 26

#### 1.5.7.0

- OPENICF-1110: Framework: upgrade to latest forgerock-parent 3.2.1
- OPENICF-1061: JCS Client mode: Make the application level heartbeat configurable
- OPENICF-1059: JCS Client mode: Implement SSL for the client mode
- OPENICF-1058: JCS Client mode: verify all the close() routines
- OPENICF-1044: JCS is missing dependencies for groovy 1.5.2.0-SNAPSHOT

- OPENICF-1020: Remove dependency upon forgerock-guava from java-framework
- OPENICF-885: Framework: investigate why connector-server-grizzly:LoadBalancingConnectorInfoManagerTest breaks the Jenkins build
- OPENICF-577: Java Remote Connector Server should be able to initiate connection to IDM

### 1.5.6.0

Version 1.5.6.0 is bundled with IDM version 6.5.0 by default.

- OPENICF-993: DotNetConnectorServer - `_pagedResultsCookie` throws 500 on last page
- OPENICF-992: .Net Connector server: WCF should be the default web socket library
- OPENICF-986: .NET Connector Server - Failed to Accept WebSocket
- OPENICF-984: .Net Connector server: Upgrade to 1.5.6.0
- OPENICF-971: Disable Javascript engine in ICF
- OPENICF-962: Java Framework: update to FR guava 26 has side effects on connector server unit tests
- OPENICF-961: Java Framework: Add unit test for Javascript executor factory
- OPENICF-942: Framework: some modules have `jdk 1.6 compile flag` - should be removed
- OPENICF-872: OpenICF java-framework does not build with unit tests enabled since making the results handlers the responsibility of the connector implementation
- OPENICF-867: Framework: `__NAME__` should not be set to 'required' by default
- OPENICF-785: .NET connector server - `ConnectorServerService.exe` doesn't use value from `serviceName`
- OPENICF-734: Upgrade Java connector server dependencies
- OPENICF-732: Upgrade .Net connector server dependencies
- OPENICF-676: .Net Connector Server should include the PowerShell sample templates

## Chapter 3

# Adobe Marketing Cloud Connector

### 1.5.20.11

No public changes were made specific to this connector, though a new version was released.

### 1.5.20.5

No public changes were made specific to this connector, though a new version was released.

See 1.5.20.5 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.5 of the connector.

### 1.5.20.0

No issues specific to this connector were addressed in this release.

See 1.5.20.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.0 of the connector.

### 1.5.19.6

No issues specific to this connector were addressed in this release.

See 1.5.19.6 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.6 of the connector.

### 1.5.19.5

No issues specific to this connector were addressed in this release.

See 1.5.19.5 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.5 of the connector.

### 1.5.19.4

No issues specific to this connector were addressed in this release.

See 1.5.19.4 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.4 of the connector.

### 1.5.19.3

No issues specific to this connector were addressed in this release.

See 1.5.19.3 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.3 of the connector.

### 1.5.19.2

No issues specific to this connector were addressed in this release.

See 1.5.19.2 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.2 of the connector.

### 1.5.19.1

No issues specific to this connector were addressed in this release.

See 1.5.19.1 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.1 of the connector.

### 1.5.19.0

No issues specific to this connector were addressed in this release.

See 1.5.19.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.0 of the connector.

### 1.5.18.0

#### Note

Starting in version 1.5.18.0, the ICF Connector Framework and all connectors bundled with IDM share a unified version number.

- No issues were addressed in this release.

### 1.5.4.0

Version 1.5.4.0 is bundled with the IDM 7.0.0 release.

- OPENICF-1270: Adobe Campaign Manager connector: Bump up to ICF 1.5.11.0

### 1.5.2.0

Version 1.5.2.0 is bundled with the IDM 6.5.0 release.

- OPENICF-899: Adobe CM: Make scope configurable

## Chapter 4

# AS400 Connector

### 1.5.20.12

Initial release of the AS400 connector. Refer to "AS400 connector" in the *Connectors Guide* for more information.

## Chapter 5

# AWS Connector

### 1.5.20.11

No public changes were made specific to this connector, though a new version was released.

### 1.5.20.7

Initial release of the AWS connector. See "AWS Connector" in the *Connectors Guide* for more information.

- OPENICF-1780: AWS IAM Connector

## Chapter 6

# Box Connector

### 1.5.20.11

No public changes were made specific to this connector, though a new version was released.

## Chapter 7

# Cerner Connector

### 1.5.20.11

- OPENICF-1960: Cerner Connector v2

### 1.5.20.6

Initial release of the Cerner connector. See "Cerner Connector" in the *Connectors Guide* for more information.

- OPENICF-1737: Cerner Connector



## Chapter 8

# CSV File Connector

### 1.5.20.11

No public changes were made specific to this connector, though a new version was released.

### 1.5.20.8

- OPENICF-1935: CSV Connector: Generates a stacktrace for Read Only permission files
- OPENICF-1969: CSV Connector: Updates csv connector parsing library
- OPENICF-1258: CSV Connector: Empty strings stripped, replaced with nulls.

### 1.5.20.2

OPENICF-1677: CSV Connector returns pagedResultsCookie for queries with \_pageSize=0.

### 1.5.20.0

No issues specific to this connector were addressed in this release.

See 1.5.20.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.0 of the connector.

### 1.5.19.6

No issues specific to this connector were addressed in this release.

See 1.5.19.6 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.6 of the connector.

### 1.5.19.5

- OPENICF-1530: system?\_action=createFullConfig validation does not return consistent errors

See 1.5.19.5 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.5 of the connector.

### 1.5.19.4

No issues specific to this connector were addressed in this release.

See 1.5.19.4 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.4 of the connector.

### 1.5.19.3

No issues specific to this connector were addressed in this release.

See 1.5.19.3 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.3 of the connector.

### 1.5.19.2

No issues specific to this connector were addressed in this release.

See 1.5.19.2 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.2 of the connector.

### 1.5.19.1

No issues specific to this connector were addressed in this release.

See 1.5.19.1 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.1 of the connector.

### 1.5.19.0

No issues specific to this connector were addressed in this release.

See 1.5.19.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.0 of the connector.

### 1.5.18.0

#### Note

Starting in version 1.5.18.0, the ICF Connector Framework and all connectors bundled with IDM share a unified version number.

- No issues were addressed in this release.

### 1.5.7.0

Version 1.5.7.0 is bundled with the IDM 7.0.0 release.

- OPENICF-1274: CSV Connector: Bump up to ICF 1.5.11.0
- OPENICF-1137: CSV Connector: Enforcement of static import rules
- OPENICF-1051: Empty CSV file causes waiting circle when attempting to access CSV connector page

### 1.5.4.0

Version 1.5.4.0 is bundled with the IDM 6.5.0 release.

- OPENICF-810: Wrong or uncomplete error reported when creating a CSV connector
- OPENICF-799: CSV livesync keeps token files
- OPENICF-791: Error/Warning isn't displayed when "Uid" missing at record
- OPENICF-789: Missing check for headerUid if it exists in csv file data
- OPENICF-784: CSV Connector should skip byte order marks
- OPENICF-781: Increasing column number within CSV files causes SuperCSV exception
- OPENICF-773: CSV: Schema call result should not include \_\_UID\_\_
- OPENICF-711: Fix error reporting when using blank column names

## Chapter 9

# Database Table Connector

### 1.5.20.8

No public changes were made specific to this connector, though a new version was released.

### 1.5.20.7

No public changes were made specific to this connector, though a new version was released.

### 1.5.20.5

- OPENICF-1711: Database Table Connector - ORA-22816 error when using Oracle trigger

### 1.5.20.3

- OPENICF-1692: Database Table Connector: throwing a null pointer exception

### 1.5.20.1

- OPENICF-1477: Database Table Connector: ORA-01000: maximum open cursors exceeded
- OPENICF-1596: PSQLError: FATAL: terminating connection due to idle-in-transaction timeout

### 1.5.20.0

No issues specific to this connector were addressed in this release.

See 1.5.20.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.0 of the connector.

### 1.5.19.6

No issues specific to this connector were addressed in this release.

See 1.5.19.6 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.6 of the connector.

### 1.5.19.5

- OPENICF-1510: Errors in Database Table Connector docs

See 1.5.19.5 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.5 of the connector.

#### 1.5.19.4

No issues specific to this connector were addressed in this release.

See 1.5.19.4 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.4 of the connector.

#### 1.5.19.3

No issues specific to this connector were addressed in this release.

See 1.5.19.3 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.3 of the connector.

#### 1.5.19.2

No issues specific to this connector were addressed in this release.

See 1.5.19.2 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.2 of the connector.

#### 1.5.19.1

No issues specific to this connector were addressed in this release.

See 1.5.19.1 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.1 of the connector.

#### 1.5.19.0

No issues specific to this connector were addressed in this release.

See 1.5.19.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.0 of the connector.

#### 1.5.18.0

##### Note

Starting in version 1.5.18.0, the ICF Connector Framework and all connectors bundled with IDM share a unified version number.

- No issues were addressed in this release.

#### 1.5.3.0

##### Note

Version 1.5.3.0 is bundled with the IDM 7.0.0 release. This version updates the connector to use version 1.5 of the ICF API. If you are upgrading from an earlier version of the connector, update your provisioner

configuration file to accommodate these changes. For more information, see "Database Table Connector" in the *Connectors Guide*.

- OPENICF-1297: Database Table Connector: Sync Logic Missing Changed Records
- OPENICF-1286: Database Table Connector: Fix javadoc
- OPENICF-1285: Database Table Connector: Fix build warnings
- OPENICF-1238: Database Table Connector: Upgrade to ICF 1.5 API
- OPENICF-1212: Database Table Connector: Use Tomcat JDBC pool
- OPENICF-1201: Database Table Connector: Disabling through admin UI recreates a database connection

#### 1.4.4.0

- OPENICF-1183: Database Table Connector: sql syntax incorrect for ms sql 2012 query using pageSize

#### 1.4.3.0

- OPENICF-1167: Database Table Connector: ICF special attributes should never be used as sort keys
- OPENICF-1164: Database Table Connector: Change the connector license to CDDL
- OPENICF-1154: Database Table Connector: rest query on remote endpoint with id as a string returns HTTP 400

#### 1.4.2.0

- OPENICF-903: Database Table Connector incorrectly requires `__NAME__` attribute within CREATE request

#### 1.4.1.0

Version 1.4.1.0 is bundled with IDM version 6.5.0 by default.

- OPENICF-933: ORA-00933: SQL command not properly ended

## Chapter 10

# DocuSign Connector

### 1.5.20.11

No public changes were made specific to this connector, though a new version was released.

### 1.5.0.0

- OPENICF-980: DocuSign - during update on managed/user implicitSync throw SynchronizationException
- OPENICF-979: DocuSign - PATCH remove on account is not doing anything
- OPENICF-978: Docusign - Add replacing `__NAME__` with actual Attribute

## Chapter 11

# Epic Connector

### 1.5.20.11

No public changes were made specific to this connector, though a new version was released.

### 1.5.20.6

- OPENICF-1818: Epic V2 Connector
- OPENICF-1878: Epic Connector: Query filter not matching uid returns HTTP 404

### 1.5.20.5

Initial release of the Epic connector. See "Epic Connector" in the *Connectors Guide* for more information.

- OPENICF-1750: Epic Connector



## Chapter 12

# GCP Connector

### 1.5.20.11

Initial release of the GCP connector. See "Google Cloud Platform Connector" in the *Connectors Guide* for more information.

- OPENICF-1749: GCP Connector

## Chapter 13

# Google Apps Connector

### 1.5.20.12

- OPENICF-2192: NPE when updating LicenseAssignments through a user update
- OPENICF-2117: Hide Alternate Emails from the schema
- OPENICF-2195: Intermittent NPE when we try to read newly created user

### 1.5.20.11

- OPENICF-2039: GoogleApps Connector: missing some user attributes
- OPENICF-2040: GoogleApps Connector: Manage role attributes
- OPENICF-2041: GoogleApps Connector: Group attributes
- OPENICF-2064: GoogleApps Connector: Query the Google Workspace instance for Licenses
- OPENICF-2066: GoogleApps Connector: Ability to query Roles and RoleAssignments
- OPENICF-2136: GoogleApps Connector: Exponential Back off for reading google objects required

### 1.5.20.8

- OPENICF-2038: Google Apps Connector: Updating user's group membership may return NPE

### 1.5.20.7

No public changes were made specific to this connector, though a new version was released.

### 1.5.20.6

- OPENICF-1181: Google Apps Connector: Unable to delete custom attributes

### 1.5.20.5

- OPENICF-1808: Google Apps Connector: when user is provisioned using a role assignment, group isn't set correctly

### 1.5.20.4

No public changes were made specific to this connector, though a new version was released.

### 1.5.20.3

- OPENICF-1716: Google Apps Connector: Add recoveryEmail and recoveryPhone attributes for User

### 1.5.20.0

No issues specific to this connector were addressed in this release.

See 1.5.20.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.0 of the connector.

### 1.5.19.6

No issues specific to this connector were addressed in this release.

See 1.5.19.6 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.6 of the connector.

### 1.5.19.5

No issues specific to this connector were addressed in this release.

See 1.5.19.5 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.5 of the connector.

### 1.5.19.4

No issues specific to this connector were addressed in this release.

See 1.5.19.4 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.4 of the connector.

### 1.5.19.3

No issues specific to this connector were addressed in this release.

See 1.5.19.3 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.3 of the connector.

### 1.5.19.2

No issues specific to this connector were addressed in this release.

See 1.5.19.2 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.2 of the connector.

### 1.5.19.1

No issues specific to this connector were addressed in this release.

See 1.5.19.1 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.1 of the connector.

### 1.5.19.0

No issues specific to this connector were addressed in this release.

See 1.5.19.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.0 of the connector.

### 1.5.18.0

#### Note

Starting in version 1.5.18.0, the ICF Connector Framework and all connectors bundled with IDM share a unified version number.

- No issues were addressed in this release.

### 1.4.9.0

Version 1.4.9.0 is bundled with the IDM 7.0.0 release.

- OPENICF-1279: Google Apps Connector: Bump up to ICF 1.5.11.0

### 1.4.7.0

- OPENICF-1180: Google Apps Connector: Bad dependencies version
- OPENICF-1153: Google Apps Connector: suspended query
- OPENICF-1152: Google Apps connector: Add the ability to Sync custom attributes
- OPENICF-1118: Google Apps Connector: Update googleapps deps
- OPENICF-1101: GoogleApps Connector: Google member recon failing

### 1.4.6.0

- OPENICF-1093: Google Apps Connector: Only EqualsFilter('groupKey') is supported - error

### 1.4.5.0

- OPENICF-1090: Google Apps Connector: Change the connector license to CDDL
- OPENICF-1087: GoogleApps Connector: DELETE on self should return 400 Bad Request
- OPENICF-1085: GoogleApps Connector: configuration properties should throw warning with invalid values
- OPENICF-1079: Google Apps Connector: Google's APIs require a "familyName" at create time for accounts and generic purpose accounts don't have family names

- OPENICF-1078: GoogleApps Connector: Several attributes with eq filters are returning 500 Errors
- OPENICF-1077: GoogleApps Connector: Incorrect error on GET \_\_GROUP\_\_ with queryFilter
- OPENICF-1069: Google Apps Connector: Ability to query by orgUnitPaths
- OPENICF-1065: Google Apps Connector: Unsupported OR queries return inappropriate messages
- OPENICF-1064: Google Apps Connector: /suspended eq true query doesn't work
- OPENICF-1063: Google Apps connector: Query is broken due to the use of WHITESPACE vs whitespace()
- OPENICF-1062: Google Apps Connector: Equals Filter
- OPENICF-998: Google Apps: Incorrect and missing Member attributes returned for Read or Query on Member object(s)
- OPENICF-441: Google Apps: Incomplete support for adding/removing User Aliases within the GoogleApps connector
- OPENICF-431: Google Apps: Expose the default maxResults parameter of the Users.list API as configurable option

#### 1.4.4.0

Version 1.4.4.0 is bundled with IDM version 6.5.0 by default.

- OPENICF-876: RFE for OpenIDM: Latest Google Libraries

## Chapter 14

# Groovy Connector Toolkit

### 1.5.20.0

No issues specific to this connector were addressed in this release.

See 1.5.20.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.0 of the connector.

### 1.5.19.6

No issues specific to this connector were addressed in this release.

See 1.5.19.6 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.6 of the connector.

### 1.5.19.5

- **OPENICF-1523:** ScriptedGroovy connectors fail to load in IDM 7.x when embedded Groovy version does not match IDM Groovy version

See 1.5.19.5 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.5 of the connector.

### 1.5.19.4

No issues specific to this connector were addressed in this release.

See 1.5.19.4 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.4 of the connector.

### 1.5.19.3

No issues specific to this connector were addressed in this release.

See 1.5.19.3 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.3 of the connector.

### 1.5.19.2

No issues specific to this connector were addressed in this release.

See 1.5.19.2 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.2 of the connector.

### 1.5.19.1

No issues specific to this connector were addressed in this release.

See 1.5.19.1 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.1 of the connector.

### 1.5.19.0

- OPENICF-1414: Scripted Groovy (v3) based connectors fail to load with IDM releases prior to 7.0

See 1.5.19.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.0 of the connector.

### 1.5.18.0

#### Note

Starting in version 1.5.18.0, the ICF Connector Framework and all connectors bundled with IDM share a unified version number.

- No issues were addressed in this release.

### 1.5.7.0

Version 1.5.7.0 is bundled with the IDM 7.0.0 release.

- OPENICF-1268: Groovy connector: Bump up to ICF 1.5.11.0
- OPENICF-1261: Groovy connector: fix javadoc
- OPENICF-1134: Groovy Connector: Enforcement of static import rules

### 1.5.2.0

No issues were addressed in this release.

### 1.5.1.0

Version 1.5.1.0 is bundled with IDM version 6.5.0 by default.

- OPENICF-955: Groovy connector: Remove Azure AD test sample

## Chapter 15

# HubSpot Connector

### 1.5.20.11

No public changes were made specific to this connector, though a new version was released.

### 1.5.2.0

- OPENICF-1342: Hubspot connector fails to get token

### 1.5.0.0

- OPENICF-975: Revert to older version of apache geronimo in Hubspot connector
- OPENICF-925: Hubspot Connector: Create/Update fails
- OPENICF-923: Hubspot Connector - last page contain pagedResultsCookie if resultCount is same as pageSize
- OPENICF-916: Hubspot Connector - update on company throw error 500
- OPENICF-915: Hubspot Connector - Add NotCreatable, NotUpdatable flags to read-only objectClass Owner
- OPENICF-914: Hubspot Connector - create on contactProperties throw error 500
- OPENICF-913: Hubspot Connector - create on company throw error 500
- OPENICF-912: Hubspot Connector - pagedResultsCookie is always null when using paging



## Chapter 16

# Kerberos Connector

### 1.5.20.0

No issues specific to this connector were addressed in this release.

See 1.5.20.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.0 of the connector.

### 1.5.19.6

No issues specific to this connector were addressed in this release.

See 1.5.19.6 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.6 of the connector.

### 1.5.19.5

No issues specific to this connector were addressed in this release.

See 1.5.19.5 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.5 of the connector.

### 1.5.19.4

No issues specific to this connector were addressed in this release.

See 1.5.19.4 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.4 of the connector.

### 1.5.19.3

No issues specific to this connector were addressed in this release.

See 1.5.19.3 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.3 of the connector.

### 1.5.19.2

No issues specific to this connector were addressed in this release.

See 1.5.19.2 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.2 of the connector.

### 1.5.19.1

No issues specific to this connector were addressed in this release.

See 1.5.19.1 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.1 of the connector.

### 1.5.19.0

No issues specific to this connector were addressed in this release.

See 1.5.19.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.0 of the connector.

### 1.5.18.0

#### Note

Starting in version 1.5.18.0, the ICF Connector Framework and all connectors bundled with IDM share a unified version number.

- No issues were addressed in this release.

### 1.5.5.0

Version 1.5.5.0 is bundled with the IDM 7.0.0 release.

- OPENICF-1280: Kerberos Connector: Bump up to ICF 1.5.11.0, Groovy 1.5.3.0 and SSH 1.5.2.0
- OPENICF-738: Kerberos Connector: Severe Error in the log when starting OpenIDM

### 1.5.1.0

Version 1.5.1.0 is bundled with IDM version 6.5.0 by default.

No issues were addressed in this release.

## Chapter 17

# Generic LDAP Connector

### 1.5.20.12

- OPENICF-400: LDAP connector should be able to properly handle reading the AD tokenGroups attribute

### 1.5.20.11

- OPENICF-1856: LDAP Connector: Assignment of static group to IDM User fails to assign it on LDAP side if user is already a member of a Dynamic Group on LDAP side
- OPENICF-2089: LDAP Connector: ldapGroups membership does not take into account nested membership of other groups
- OPENICF-2108: LDAP Connector: slow group membership updates with unindexed member/uniqueMember attributes in DS
- OPENICF-2126: Assignment Issue: Managed User to DS Groups Failure to Select Target Group

### 1.5.20.9

No public changes were made specific to this connector, though a new version was released.

### 1.5.20.8

- OPENICF-1977: LDAP Connector: Detect CA LDAP directory server

### 1.5.20.7

- OPENICF-1897: LDAP Connector: Add support for nested AD groups

### 1.5.20.6

- OPENICF-1901: LDAP Connector: Reduce JVM garbage from ConnectorObjectBuilder and AttributeBuilder

### 1.5.20.5

- OPENICF-1859: LDAP Connector: `_memberId` is not returned with AD & liveSync if attribute range is used

### 1.5.20.3

- OPENICF-1731: LDAP Connector: Escape characters (`\`) not properly handled on delete and updates ops

### 1.5.20.2

- OPENICF-1666: LDAP Connector: ldapGroups should restrict membership to the specified contexts.

### 1.5.20.0

- OPENICF-1586: LDAP Connector: Timestamp sync strategy: Synchronization filters are not used properly
- OPENICF-1560: LDAP Connector: RFE Disable Paged Results Control

See 1.5.20.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.0 of the connector.

### 1.5.19.6

No issues specific to this connector were addressed in this release.

See 1.5.19.6 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.6 of the connector.

### 1.5.19.5

No issues specific to this connector were addressed in this release.

See 1.5.19.5 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.5 of the connector.

### 1.5.19.4

No issues specific to this connector were addressed in this release.

See 1.5.19.4 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.4 of the connector.

### 1.5.19.3

No issues specific to this connector were addressed in this release.

See 1.5.19.3 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.3 of the connector.

### 1.5.19.2

- OPENICF-1472: LDAP Connector: Data not synced from AD to IDM via livesync on `__ALL__` object
- OPENICF-1470: LDAP Connector: Null Check in ADUserAccountControl.addControl
- OPENICF-1466: LDAP Connector: Update filterWithOrInsteadOfAnd to apply to timestamp and Active Directory liveSync

- OPENICF-1448: LDAP Connector: Enabling changelog livesync for oracle unified directory (OUD)

See 1.5.19.2 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.2 of the connector.

### 1.5.19.1

No issues specific to this connector were addressed in this release.

See 1.5.19.1 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.1 of the connector.

### 1.5.19.0

- OPENICF-1388: LDAP Connector 1.5.5.0 throws java.lang.NoSuchMethodError on Java 8
- OPENICF-1396: OPENIDM-15448 changes seemingly broke querying ldap via the data tab

See 1.5.19.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.0 of the connector.

### 1.5.18.0

#### Note

Starting in version 1.5.18.0, the ICF Connector Framework and all connectors bundled with IDM share a unified version number.

- No issues were addressed in this release.

### 1.5.6.0

- OPENICF-1413: Use framework version 1.5.11.0 for ldap-connector to support Java8-compatible release

### 1.5.5.0

Version 1.5.5.0 is bundled with the IDM 7.0.0 release.

- OPENICF-1053: LDAP Connector: `_action=test` on wrong certificate pattern should return error
- OPENICF-1162: LDAP Connector: empty array becomes absent if `useTimestampsForSync` is used
- OPENICF-1320: LDAP Connector: Description is not available for some properties
- OPENICF-1353: LDAP Connector: NPE if provisioner has attribute-mapping for objectGUID but system account does not have objectGUID

- OPENICF-1347: Expose lastChangeNumber info through SERVER\_INFO object of LDAP connector

#### 1.5.4.0

- OPENICF-1343: LDAP Connector: Unable to use VLV Index Search Strategy
- OPENICF-1312: LDAP Connector expects the range returned from AD to be 0-1499 for the member attribute

#### 1.5.3.0

- OPENICF-1257: LDAP Connector: startTLS throws InvalidCredentialException with IDM on JDK11

#### 1.5.2.0

- OPENICF-1278: LDAP Connector: Bump up to ICF 1.5.11.0

#### 1.5.1.0

- OPENICF-1247: LDAP Connector: Do not overwrite AD userAccountControl when it has not changed from previous value
- OPENICF-1223: LDAP: AD/AD LDS query id with sortKeys called after query id with invalid cookie returns code 500

#### 1.5.0.0

- OPENICF-1188: LDAP Connector: modifiersNamesToFilterOut does not check the creatorsName for an 'add'
- OPENICF-1175: LDAP Connector: sortKeys = \_id is ignored
- OPENICF-1174: LDAP Connector: query-all-ids causes NPE
- OPENICF-1161: LDAP connector: inconsistency in escaping special chars when comparing new DN with existing entry DN (when updating entry), results in MODIFYDN
- OPENICF-1159: LDAP Connector: Upgrade to ICF 1.5
- OPENICF-1147: LDAP Connector: Query with \_pagedResultsOffset higher than number of records in ldap is returning incorrect results
- OPENICF-1004: LDAP Connector: QueryFilter presence modifier against System LDAP endpoint is not applied within ldapSearch

#### 1.4.11.0

- OPENICF-1117: AD UserAccountControl attributes not sync'd when using ALL ObjectClass

- OPENICF-1108: LDAP Connector: Change the connector license to CDDL
- OPENICF-1100: Bad grammar in error message on initial connection
- OPENICF-1055: LDAP Connector: In GroupHelper.java's getLdapGroups and getLdapGroupMemberships, explicitly ask for dn
- OPENICF-963: RFE: LDAP connector - enhance health check mechanism

#### 1.4.10.0

- OPENICF-1067: LDAP Connector: Enhance connection exception messages
- OPENICF-1057: LDAP connector: error code 20 should be caught on update

#### 1.4.9.0

- OPENICF-1035: LDAP Connector - DJ - ldapGroups are not returned if empty

#### 1.4.8.0

Version 1.4.8.0 is bundled with IDM version 6.5.0 by default.

- OPENICF-958: LDAP - sortKeys by \_id does not work with dj 6.5.0
- OPENICF-949: LDAP connector - AD with SSL \_action=authenticate returns 500 Internal server error
- OPENICF-941: RFE for additional logging in LDAP connector getSearchStrategy()
- OPENICF-918: support for multiple Kerberos credentials for different LDAP connector instances
- OPENICF-883: LDAP connector: update should log attributes to modify
- OPENICF-878: LDAP SSL does not work any more
- OPENICF-868: Extend detection of CA LDAP server type
- OPENICF-866: Implement a connectionTimeout configuration for LDAP Connector
- OPENICF-688: AD LDS InvalidAttributeValueException is not getting reported
- OPENICF-666: LDAP Connector: Authenticate - ability to make distinction between invalid cred and expired password
- OPENICF-665: Check LDAP Server DNS Name against the SSL Certificate's subject/alternative name
- OPENICF-561: LDAP connector: get rid of legacy config parameters

## Chapter 18

# Marketo Connector

### 1.5.20.11

No public changes were made specific to this connector, though a new version was released.

### 1.5.20.5

No public changes were made specific to this connector, though a new version was released.

See 1.5.20.5 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.5 of the connector.

### 1.5.20.0

No issues specific to this connector were addressed in this release.

See 1.5.20.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.0 of the connector.

### 1.5.19.6

No issues specific to this connector were addressed in this release.

See 1.5.19.6 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.6 of the connector.

### 1.5.19.5

No issues specific to this connector were addressed in this release.

See 1.5.19.5 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.5 of the connector.

### 1.5.19.4

No issues specific to this connector were addressed in this release.

See 1.5.19.4 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.4 of the connector.

### 1.5.19.3

No issues specific to this connector were addressed in this release.



See 1.5.19.3 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.3 of the connector.

### 1.5.19.2

No issues specific to this connector were addressed in this release.

See 1.5.19.2 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.2 of the connector.

### 1.5.19.1

No issues specific to this connector were addressed in this release.

See 1.5.19.1 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.1 of the connector.

### 1.5.19.0

No issues specific to this connector were addressed in this release.

See 1.5.19.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.0 of the connector.

### 1.5.18.0

#### Note

Starting in version 1.5.18.0, the ICF Connector Framework and all connectors bundled with IDM share a unified version number.

- No issues were addressed in this release.

### 1.5.4.0

Version 1.5.4.0 is bundled with the IDM 7.0.0 release.

- OPENICF-1273: Marketo connector: Bump up to ICF 1.5.11.0 and Groovy connector 1.5.3.0
- OPENICF-1132: Marketo Connector: Enforcement of static import rules

### 1.5.1.0

Version 1.5.1.0 is bundled with IDM version 6.5.0 by default.

No issues were addressed in this release.

## Chapter 19

# MongoDB Connector

### 1.5.20.7

No public changes were made specific to this connector, though a new version was released.

### 1.5.20.6

- OPENICF-1833: Update MongoDB driver to the latest for compatibility with newer versions of MongoDB

### 1.5.20.0

- OPENICF-1553: MongoDB Connector: convertBSONtoICF() does not traverse Arrays.

See 1.5.20.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.0 of the connector.

### 1.5.19.6

No issues specific to this connector were addressed in this release.

See 1.5.19.6 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.6 of the connector.

### 1.5.19.5

No issues specific to this connector were addressed in this release.

See 1.5.19.5 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.5 of the connector.

### 1.5.19.4

No issues specific to this connector were addressed in this release.

See 1.5.19.4 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.4 of the connector.

### 1.5.19.3

No issues specific to this connector were addressed in this release.

See 1.5.19.3 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.3 of the connector.

### 1.5.19.2

No issues specific to this connector were addressed in this release.

See 1.5.19.2 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.2 of the connector.

### 1.5.19.1

No issues specific to this connector were addressed in this release.

See 1.5.19.1 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.1 of the connector.

### 1.5.19.0

No issues specific to this connector were addressed in this release.

See 1.5.19.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.0 of the connector.

### 1.5.18.0

#### Note

Starting in version 1.5.18.0, the ICF Connector Framework and all connectors bundled with IDM share a unified version number.

- No issues were addressed in this release.

### 1.5.6.0

Version 1.5.6.0 is bundled with the IDM 7.0.0 release.

- OPENICF-1308: MongoDB Connector: update dep to latest groovy connector and mongodb driver
- OPENICF-1282: MongoDB Connector: Bump up to ICF 1.5.11.0 and Groovy 1.5.3.0
- OPENICF-1281: MongoDB Connector: Fix the javadoc
- OPENICF-1199: MongoDB Connector: Change the connector license to CDDL
- OPENICF-1198: MongoDB Connector: update to latest mongo driver and embed deps
- OPENICF-1098: MongoDB Connector: Doesn't work with MongoDB 4.0 and above

### 1.5.1.0

Version 1.5.1.0 is bundled with IDM version 6.5.0 by default.

- OPENICF-924: Update on \_\_ACCOUNT\_\_ on mongodb usersRoles throws 500 Internal Server Error
- OPENICF-908: MongoDB: On Update op, do not insert the Uid in the default document
- OPENICF-870: Remove the 'database' name from the userName from the user
- OPENICF-865: MongoDB: usersRoles account pwd should be set as required
- OPENICF-863: MongoDB: usersRoles if role exist should throw AlreadyExistsException instead of Internal Server Error

## Chapter 20

# MS Graph API Connector

### 1.5.20.11

- OPENICF-2068: MSGraphAPI Connector: Implement Azure AD Directory Roles support
- OPENICF-2088: MSGraphAPI Connector: Implement Azure AD custom role creation

### 1.5.20.9

- OPENICF-1614: MS Graph API Connector: Livesync on user/group does not populate membership
- OPENICF-1858: MS Graph API Connector: Add Group Owners management

### 1.5.20.8

- OPENICF-1606: MS Graph API Connector: Upgrade to MS Graph Java SDK v3
- OPENICF-1807: MS Graph API Connector: Better handle failure of hard delete
- OPENICF-1819: MS Graph API Connector: "performHardDelete" should be set to false by default

### 1.5.20.4

No public changes were made specific to this connector, though a new version was released.

### 1.5.20.2

- OPENICF-1656: MS Graph API Connector: Unable to update onPremisesExtensionAttributes.
- OPENICF-1687: MS Graph API Connector: Should be able to work behind an HTTP Proxy.
- OPENICF-1698: MS Graph API Connector: get the cause of exception if test() fails.

### 1.5.20.0

- OPENICF-1538: MS Graph API Connector: Sync() does not work
- OPENICF-1541: MS Graph API Connector: Add ConsistencyLevel: eventual' header and \$count=true for endsWith filter
- OPENICF-1557: MS Graph API Connector: Handle user employeeHireDate attribute and Calendar data type

- OPENICF-1558: MS Graph API Connector: Make sure sortKey is supported by the objectClass
- OPENICF-1559: MS Graph API Connector: Implement Authenticate() call
- OPENICF-1595: MS Graph API Connector: test() should connect to the MS Graph endpoint to validate the connection

The following known issues will be addressed in a later release:

- OPENICF-1614: MS Graph API Connector: Livesync on user/group does not populate membership
- OPENICF-1615: MS Graph API Connector: Deleting Azure AD group works but throws HTTP 500

See 1.5.20.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.0 of the connector.

### 1.5.19.6

No issues specific to this connector were addressed in this release.

See 1.5.19.6 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.6 of the connector.

### 1.5.19.5

- OPENICF-1493: MS Graph API Connector: add the ability to read/assign license for the user
- OPENICF-1507: MS Graph API Connector: add the ability to read subscribedSku object
- OPENICF-1525: MS Graph API Connector: replace the default Graph SDK logger
- OPENICF-1526: MS Graph API Connector: add the ability to read Team objects
- OPENICF-1499: MS Graph API Connector: remove the maximumConnections property

See 1.5.19.5 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.5 of the connector.

### 1.5.19.4

No issues specific to this connector were addressed in this release.

See 1.5.19.4 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.4 of the connector.

### 1.5.19.3

- OPENICF-1475: MS Graph API Connector: the 'manager' only returns the id and not the full object

- OPENICF-1481: MS Graph API Connector: add the ability to assign/remove user's manager
- OPENICF-1483: MS Graph API Connector: can't remove all groups a user belongs to

See 1.5.19.3 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.3 of the connector.

### 1.5.19.2

- OPENICF-1469: MS Graph API Connector: implement a read/write rate limiter

See 1.5.19.2 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.2 of the connector.

### 1.5.19.1

- OPENICF-1446: MS Graph API Connector: implement PoolableConnector

See 1.5.19.1 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.1 of the connector.

### 1.5.19.0

Initial release of the MS Graph API Connector.

See 1.5.19.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.0 of the connector.

## Chapter 21

# PeopleSoft Connector

### 1.5.20.12

- OPENICF-2033: PeopleSoft Connector v2.0

### 1.5.20.11

No public changes were made specific to this connector, though a new version was released.

### 1.5.20.8

No public changes were made specific to this connector, though a new version was released.

### 1.5.20.7

Initial release of the PeopleSoft connector. See "PeopleSoft Connector" in the *Connectors Guide* for more information.

- OPENICF-1748: PeopleSoft Connector



## Chapter 22

# PowerShell Connector Toolkit

### 1.4.6.0

The PowerShell Connector Toolkit is available from the [ForgeRock BackStage](#) download site.

- OPENICF-902: Powershell AD sample using paging always return pagedResultsCookie null
- OPENICF-890: AD Powershell: use the 'Host' config property with ADSI
- OPENICF-884: AD Powershell: implement paged searches

## Chapter 23

# IBM RACF Connector

### 1.5.20.11

- OPENICF-1762: IBM RACF API Connector

#### Note

There was a previous RACF connector, which is deprecated. Users of the previous RACF connector should migrate to the new connector.

## Chapter 24

# Remote Connector Server

### 1.5.20.12

- OPENICF-1473: Java RCS: ConnectorServer.properties template should include config for FRAAS
- OPENICF-1889: Java RCS: Include relevant defaults for RCS config

### 1.5.20.11

- OPENICF-2132: Java RCS: docker-entrypoint.sh uses -run instead of -service to start the RCS
- OPENICF-2137: Java RCS: When running in -service mode, version is not displayed at startup
- OPENICF-2174: Java RCS: Incompatible with AM macaroons: Unrecognized field "expireTime"

### 1.5.20.8

- OPENICF-2000: potential log flooding resulting from operation cancel request messages for LocalOperations which have already completed

### 1.5.20.7

- OPENICF-1883: Java RCS: Improve stability of RCS WebSocket connection management
- OPENICF-1975: Java RCS: Increase default heap size from 512m to 1g
- OPENICF-1925: Java RCS: require explicitly set property to enable agent deployment

### 1.5.20.6

- OPENICF-1832: Java RCS: High CPU usage when running as a service

### 1.5.20.5

- OPENICF-1855: Investigate handling query 'poison pill' termination via recon automatic retry upon exception receipt

### 1.5.20.4

- OPENICF-1726: Java RCS: OAuth access token should be cached and reused till expired
- OPENICF-1744: Java RCS: Unable to run RCS with Marketo connector using a different groovy version

- OPENICF-1796: Java RCS: NPE if connectorserver.url has a bad hostname

### 1.5.20.3

- OPENICF-1725: Java RCS: classPath issue in JAVA\_DLL when running as a service on Windows
- OPENICF-1730: Client ConnectorInfos cache not refreshed upon RCS instance restart when using RCS Agent
- OPENICF-1743: Java RCS: windows service starts up and stops abruptly
- OPENICF-1751: Sporadic issues managing RCS-hosted connectors through IDM Native Admin Console
- OPENICF-1783: Java RCS: Rename the windows service name
- OPENICF-1792: Java RCS: message hostId missing and causing a connection drop
- OPENICF-1746: Java RCS: Should display its current version in console and jar files should have their version in file name
- OPENICF-1764: Java RCS: on Windows, ConnectorServer.bat /setKey does not work
- OPENICF-1774: Java RCS: upgrade Procrun to latest version for RCS as a Windows service.

### 1.5.20.2

OPENICF-1655: Java RCS: When using TLS, the RCS does not work behind a proxy.

## Chapter 25

# Salesforce Connector

### 1.5.20.11

No public changes were made specific to this connector, though a new version was released.

### 1.5.20.8

- OPENICF-2002: Salesforce Connector: syncFailureHandler can exceed maxRetries

### 1.5.20.7

- OPENICF-1812: Salesforce Connector: syncFailureHandler maxRetries is not working

### 1.5.20.5

No public changes were made specific to this connector, though a new version was released.

See 1.5.20.5 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.5 of the connector.

### 1.5.20.0

No issues specific to this connector were addressed in this release.

See 1.5.20.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.0 of the connector.

### 1.5.19.6

No issues specific to this connector were addressed in this release.

See 1.5.19.6 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.6 of the connector.

### 1.5.19.5

- OPENICF-1522: Salesforce Connector : implement StatefulConfiguration to allow persistence of accessToken in memory

See 1.5.19.5 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.5 of the connector.

#### 1.5.19.4

No issues specific to this connector were addressed in this release.

See 1.5.19.4 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.4 of the connector.

#### 1.5.19.3

- OPENICF-1471: Salesforce Connector: should not implement PoolableConnector interface

See 1.5.19.3 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.3 of the connector.

#### 1.5.19.2

No issues specific to this connector were addressed in this release.

See 1.5.19.2 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.2 of the connector.

#### 1.5.19.1

- OPENICF-1352: Salesforce connector: pagination and cookies not working properly

See 1.5.19.1 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.1 of the connector.

#### 1.5.19.0

No issues specific to this connector were addressed in this release.

See 1.5.19.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.0 of the connector.

#### 1.5.18.0

##### Note

Starting in version 1.5.18.0, the ICF Connector Framework and all connectors bundled with IDM share a unified version number.

- No issues were addressed in this release.

#### 1.5.7.0

Version 1.5.7.0 is bundled with the IDM 7.0.0 release.

- OPENICF-1267: Salesforce Connector: Bump up to ICF 1.5.11.0
- OPENICF-1266: Update Salesforce Connector to use the latest Salesforce API by default

### 1.5.3.0

- OPENICF-1218: Change the connector license to CDDL

### 1.5.2.0

- OPENICF-1224: Salesforce connector does not support sync operation
- OPENICF-1217: Salesforce Connector: double / appears in queries
- OPENICF-1194: Typos in the Basic Configuration Properties of Salesforce Connector in Connector Reference

### 1.5.1.0

- OPENICF-1120: Update the Salesforce Connect to use the latest ICF Release
- OPENICF-1116: Add the ability to support proxy uri and proxy username and password
- OPENICF-1106: JSON Error responses from Salesforce REST API are not properly handled by the Salesforce Connector
- OPENICF-1056: Query filters that match against boolean values do not work
- OPENICF-1037: SF - Connector: NPE appears when incorrect `_pagedResultsCookie` is used.
- OPENICF-1028: SF Connector: NPE when performing a PUT with null valued attribute
- OPENICF-1024: SF Connector: Unable to query via QueryFilter whose attribute value contains a single quote
- OPENICF-1023: SF Connector: Paged query fails when `_pagedResultsCookie` > 2000
- OPENICF-1022: SF Connector: Non-paged query can not return >2k results from Salesforce

### 1.5.0.0

Version 1.5.0.0 is bundled with IDM version 6.5.0 by default.

- OPENICF-989: Salesforce - patch REMOVE throws 500 Error - NullPointerException
- OPENICF-985: Salesforce Connector - invalid result for `getNewAccessToken` throws `JSONException`
- OPENICF-983: Update `Messages.properties` to remove manual default property values
- OPENICF-911: Port over existing `openidm-salesforce` module as an ICF connector
- OPENICF-859: Rewrite the current Salesforce connector as ICF connector

## Chapter 26

# SAP Connector

### 1.5.20.12

- OPENICF-2183: Exception when SAP connector is running in OpenIDM

### 1.5.20.9

- OPENICF-1675: SAP Connector: Groovy deps should be embedded
- OPENICF-2071: SAP Connector: Cannot update ACTIVITY GROUPS for users

### 1.5.0.0

The SAP Connector is available from the [ForgeRock BackStage](#) download site.

No issues were addressed in this release.



## Chapter 27

# SAP S/4HANA Connector

### 1.5.20.11

No public changes were made specific to this connector, though a new version was released.

### 1.5.20.7

Initial release of the SAP S/4HANA connector. See "SAP S/4HANA Connector" in the *Connectors Guide* for more information.

- OPENICF-1782: SAP HANA Connector

## Chapter 28

# SCIM Connector

### 1.5.20.12

- OPENICF-1916: Support for throttling
- OPENICF-2207: Ability to define Accept: and Content-Type: HTTP headers

### 1.5.20.11

- OPENICF-2112: SCIM Connector: caseSensitive
- OPENICF-2113: SCIM Connector: problem with "issuedAt" from OAuth neg
- OPENICF-2114: SCIM Connector: use authenticationBasic as an option for OAuth neg
- OPENICF-2125: SCIM Connector: Fix Filter

### 1.5.20.5

No public changes were made specific to this connector, though a new version was released.

See 1.5.20.5 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.5 of the connector.

### 1.5.20.0

- OPENICF-1589: SCIM Connector: NPE caused by exception not properly handled
- OPENICF-1591: SCIM Connector: Parsing OAuth response should not fail on unknown properties
- OPENICF-1598: SCIM Connector: NPE when updating attribute with null value
- OPENICF-1600: SCIM Connector: unknown attributes in a query result should not throw parsing exception
- OPENICF-1601: SCIM Connector: Implement a global connection timeout property

See 1.5.20.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.0 of the connector.

### 1.5.19.6

No issues specific to this connector were addressed in this release.

See 1.5.19.6 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.6 of the connector.

### 1.5.19.5

- OPENICF-1518: SCIM connector: Http client ConnectionManager is not set properly

See 1.5.19.5 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.5 of the connector.

### 1.5.19.4

No issues specific to this connector were addressed in this release.

See 1.5.19.4 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.4 of the connector.

### 1.5.19.3

No issues specific to this connector were addressed in this release.

See 1.5.19.3 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.3 of the connector.

### 1.5.19.2

- OPENICF-1401: SCIM Connector: Align exceptions for not configured (blank/null) configurationProperties

See 1.5.19.2 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.2 of the connector.

### 1.5.19.1

- OPENICF-1444: SCIM connector - provide support for 'scope'

See 1.5.19.1 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.1 of the connector.

### 1.5.19.0

No issues specific to this connector were addressed in this release.

See 1.5.19.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.0 of the connector.

### 1.5.18.0

**Note**

Starting in version 1.5.18.0, the ICF Connector Framework and all connectors bundled with IDM share a unified version number.

- No issues were addressed in this release.

### 1.5.8.0

Version 1.5.8.0 is bundled with the IDM 7.0.0 release.

- OPENICF-1360: SCIM connector throws NPE if OAUTH grantType not configured.
- OPENICF-1344: SCIM Connector: properties mapped to \_\_NAME\_\_ do not work in queries
- OPENICF-1340: SCIM Connector: Make sure ICF NAME attribute is substituted in queries
- OPENICF-1335: SCIM Connector: Query filter value is not properly encoded
- OPENICF-1333: SCIM Connector: Unable to use authenticationMethod of TOKEN
- OPENICF-1309: SCIM Connector: Bad Authorization header with client\_credentials OAuth grant type
- OPENICF-1307: SCIM Connector: bad default http headers
- OPENICF-1295: SCIM connector: Handle the HTTP 429 code (Too many requests)
- OPENICF-1292: SCIM connector: GET should not throw an exception when entry not found
- OPENICF-1272: SCIM connector: Bump up to ICF 1.5.11.0
- OPENICF-1262: SCIM connector: fix javadoc
- OPENICF-1243: SCIM Connector: Implement OAUTH refresh\_token grant type

### 1.5.2.0

- OPENICF-1249: SCIM connector: PATCH operation mishandles enterprise extension urn
- OPENICF-1149: SCIM connector: ObjectClass.ACCOUNT is hardcoded in the search
- OPENICF-1144: SCIM connector: Implement SyncOp interface

### 1.5.1.0

- OPENICF-1097: SCIM connector: mishandles schemas

### 1.5.0.0

- OPENICF-1084: SCIM Connector: Change the connector license to CDDL
- OPENICF-1071: SCIM connector: ability to configurate http proxy user and password

### 1.4.3.0

Version 1.4.3.0 is bundled with IDM version 6.5.0 by default.

No issues were addressed in this release.

## Chapter 29

# Scripted CREST Connector

### Important

The Scripted CREST Connector has been deprecated and removed from the list of bundled connectors, starting in version 7.0 of IDM. Please migrate any existing Scripted CREST Connector implementations to the Scripted REST Connector instead.

### 1.5.2.0

No issues were addressed in this release.

### 1.5.1.0

Version 1.5.1.0 is bundled with IDM version 6.5.0 by default.

No issues were addressed in this release.

## Chapter 30

# Scripted REST Connector

### 1.5.20.11

No public changes were made specific to this connector, though a new version was released.

### 1.5.20.5

No public changes were made specific to this connector, though a new version was released.

See 1.5.20.5 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.5 of the connector.

### 1.5.20.0

No issues specific to this connector were addressed in this release.

See 1.5.20.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.0 of the connector.

### 1.5.19.6

No issues specific to this connector were addressed in this release.

See 1.5.19.6 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.6 of the connector.

### 1.5.19.5

No issues specific to this connector were addressed in this release.

See 1.5.19.5 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.5 of the connector.

### 1.5.19.4

No issues specific to this connector were addressed in this release.

See 1.5.19.4 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.4 of the connector.

### 1.5.19.3

No issues specific to this connector were addressed in this release.

See 1.5.19.3 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.3 of the connector.

### 1.5.19.2

No issues specific to this connector were addressed in this release.

See 1.5.19.2 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.2 of the connector.

### 1.5.19.1

No issues specific to this connector were addressed in this release.

See 1.5.19.1 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.1 of the connector.

### 1.5.19.0

No issues specific to this connector were addressed in this release.

See 1.5.19.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.0 of the connector.

### 1.5.18.0

#### Note

Starting in version 1.5.18.0, the ICF Connector Framework and all connectors bundled with IDM share a unified version number.

- No issues were addressed in this release.

### 1.5.6.0

Version 1.5.6.0 is bundled with the IDM 7.0.0 release.

- OPENICF-1380: ScriptedREST Connector: ScriptedRESTUtils ICFJsonBuilder does not handle null values
- OPENICF-1275: ScriptedREST connector: Bump up to ICF 1.5.11.0
- OPENICF-1265: ScriptedREST connector: fix closure params in unit tests
- OPENICF-1263: ScriptedREST connector: fix javadoc
- OPENICF-1213: ScriptedREST connector: Clean up deps
- OPENICF-1133: ScriptedREST Connector: Enforcement of static import rules



### 1.5.2.0

- OPENICF-1114: ScriptedREST Connector: Change the connector license to CDDL
- OPENICF-754: Scripted REST: Implement Oauth2 authentication

### 1.5.1.0

Version 1.5.1.0 is bundled with IDM version 6.5.0 by default.

No issues were addressed in this release.

## Chapter 31

# Scripted SQL Connector

### 1.5.20.8

No public changes were made specific to this connector, though a new version was released.

### 1.5.20.7

No public changes were made specific to this connector, though a new version was released.

### 1.5.20.5

No public changes were made specific to this connector, though a new version was released.

See 1.5.20.5 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.5 of the connector.

### 1.5.20.3

No issues specific to this connector were addressed in this release.

See 1.5.20.3 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.3 of the connector.

### 1.5.20.0

No issues specific to this connector were addressed in this release.

See 1.5.20.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.0 of the connector.

### 1.5.19.6

No issues specific to this connector were addressed in this release.

See 1.5.19.6 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.6 of the connector.

### 1.5.19.5

No issues specific to this connector were addressed in this release.

See 1.5.19.5 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.5 of the connector.

#### 1.5.19.4

No issues specific to this connector were addressed in this release.

See 1.5.19.4 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.4 of the connector.

#### 1.5.19.3

No issues specific to this connector were addressed in this release.

See 1.5.19.3 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.3 of the connector.

#### 1.5.19.2

No issues specific to this connector were addressed in this release.

See 1.5.19.2 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.2 of the connector.

#### 1.5.19.1

No issues specific to this connector were addressed in this release.

See 1.5.19.1 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.1 of the connector.

#### 1.5.19.0

No issues specific to this connector were addressed in this release.

See 1.5.19.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.0 of the connector.

#### 1.5.18.0

##### Note

Starting in version 1.5.18.0, the ICF Connector Framework and all connectors bundled with IDM share a unified version number.

- No issues were addressed in this release.

#### 1.5.5.0

Version 1.5.5.0 is bundled with the IDM 7.0.0 release.

- OPENICF-1287: ScriptedSQL Connector: bump up to ICF 1.5.11.0 and Groovy 1.5.3.0
- OPENICF-1264: ScriptedSQL connector: fix javadoc

- OPENICF-1222: ScriptedSQL - Update Reset/CreateDB sample
- OPENICF-1221: ScriptedSQL - Replace table name Group in sample script with word that's not keyword
- OPENICF-1163: ScriptedSQL Connector: Change the connector license to CDDL
- OPENICF-1135: ScriptedSQL Connector: Enforcement of static import rules

### 1.5.1.0

Version 1.5.1.0 is bundled with IDM version 6.5.0 by default.

No issues were addressed in this release.

## Chapter 32

# ServiceNow Connector

### 1.5.20.11

- OPENICF-2130: ServiceNow connector query results do not match what is returned from API

### 1.5.20.3

No issues specific to this connector were addressed in this release.

See 1.5.20.3 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.3 of the connector.

### 1.5.20.0

No issues specific to this connector were addressed in this release.

See 1.5.20.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.0 of the connector.

### 1.5.19.6

No issues specific to this connector were addressed in this release.

See 1.5.19.6 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.6 of the connector.

### 1.5.19.5

No issues specific to this connector were addressed in this release.

See 1.5.19.5 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.5 of the connector.

### 1.5.19.4

No issues specific to this connector were addressed in this release.

See 1.5.19.4 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.4 of the connector.

### 1.5.19.3

No issues specific to this connector were addressed in this release.

See 1.5.19.3 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.3 of the connector.

## 1.5.19.2

No issues specific to this connector were addressed in this release.

See 1.5.19.2 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.2 of the connector.

## 1.5.19.1

No issues specific to this connector were addressed in this release.

See 1.5.19.1 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.1 of the connector.

## 1.5.19.0

No issues specific to this connector were addressed in this release.

See 1.5.19.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.0 of the connector.

## 1.5.18.0

### Note

Starting in version 1.5.18.0, the ICF Connector Framework and all connectors bundled with IDM share a unified version number.

- No issues were addressed in this release.

## 1.5.5.0

Version 1.5.5.0 is bundled with the IDM 7.0.0 release.

- OPENICF-1269: ServiceNow connector: Bump up to ICF 1.5.11.0
- OPENICF-1246: ServiceNow Connector: Update deps and embed the json lib
- OPENICF-1245: ServiceNow Connector: Change connector license to CDDL
- OPENICF-1109: ServiceNow: Fix URL parameters for the latest version
- OPENICF-1073: ServiceNow Connector: Make more stable servicenow suite due to hibernation instance
- OPENICF-967: ServiceNow: 'pagedResultsCookie' doesn't change when 'pagedResultsOffset' used in paging query request

- OPENICF-966: ServiceNow: Sorting doesn't work at queries request
- OPENICF-960: Service Now: Add query accept before the connectorObjects are handled
- OPENICF-957: ServiceNow: greater or equal operator 'ge' in queryFilter doesn't work correctly
- OPENICF-956: ServiceNow: greater operator 'gt' in queryFilter doesn't work correctly
- OPENICF-953: ServiceNow: negation operator '!' in queryFilter doesn't work

### 1.5.0.0

Version 1.5.0.0 is bundled with IDM versions 6.0 and 6.5.0 by default.

- OPENICF-848: ServiceNow: user\_password is not encrypted and it's shown in plaintext
- OPENICF-847: ServiceNow: Getting a non existing user return code 500
- OPENICF-843: ServiceNow: We are able to create role without 'name'
- OPENICF-842: ServiceNow: Generated schema has two editable properties are mapped to one attribute
- OPENICF-832: ServiceNow: Deleting a non existing user return code 500

## Chapter 33

# SSH Connector

### 1.5.20.0

No issues specific to this connector were addressed in this release.

See 1.5.20.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.0 of the connector.

### 1.5.19.6

No issues specific to this connector were addressed in this release.

See 1.5.19.6 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.6 of the connector.

### 1.5.19.5

No issues specific to this connector were addressed in this release.

See 1.5.19.5 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.5 of the connector.

### 1.5.19.4

No issues specific to this connector were addressed in this release.

See 1.5.19.4 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.4 of the connector.

### 1.5.19.3

No issues specific to this connector were addressed in this release.

See 1.5.19.3 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.3 of the connector.

### 1.5.19.2

No issues specific to this connector were addressed in this release.

See 1.5.19.2 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.2 of the connector.



### 1.5.19.1

- OPENICF-1445: SSH connector: Stale or disconnected SSH sessions are not detected when borrowing from the pool

See 1.5.19.1 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.1 of the connector.

### 1.5.19.0

No issues specific to this connector were addressed in this release.

See 1.5.19.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.0 of the connector.

### 1.5.18.0

#### Note

Starting in version 1.5.18.0, the ICF Connector Framework and all connectors bundled with IDM share a unified version number.

- No issues were addressed in this release.

### 1.5.6.0

Version 1.5.6.0 is bundled with the IDM 7.0.0 release.

- OPENICF-1277: SSH connector: Bump up to ICF 1.5.11.0 and Groovy 1.5.3.0

### 1.5.1.0

Version 1.5.1.0 is bundled with IDM version 6.5.0 by default.

No issues were addressed in this release.

## Chapter 34

# SAP SuccessFactors Connector

### 1.5.20.12

OPENICF-2007: SAP SuccessFactors v2.

### 1.5.20.11

No public changes were made specific to this connector, though a new version was released.

## Chapter 35

# Workday Connector

### 1.5.20.12

- OPENICF-2030: Connector breaks when workerID is empty when using RCS
- OPENICF-2150: Ability to add field and parameter to the request criteria

### 1.5.20.11

No public changes were made specific to this connector, though a new version was released.

### 1.5.20.3

No issues specific to this connector were addressed in this release.

See 1.5.20.3 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.3 of the connector.

### 1.5.20.2

- OPENICF-1689: Workday Connector: Workers transaction logs are filtered.
- OPENICF-1691: Workday Connector: Reduce Garbage collection when building connector objects.

### 1.5.20.0

No issues specific to this connector were addressed in this release.

See 1.5.20.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.20.0 of the connector.

### 1.5.19.6

No issues specific to this connector were addressed in this release.

See 1.5.19.6 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.6 of the connector.

### 1.5.19.5

- OPENICF-1504: Workday Connector: SyncToken should be updated even if no events

- OPENICF-1506: Workday Connector: SyncToken should be set to tenant timestamp after call to sync()
- OPENICF-1508: Workday Connector: Query on SCR objects should not include date range as a search criteria

See 1.5.19.5 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.5 of the connector.

#### 1.5.19.4

No issues specific to this connector were addressed in this release.

See 1.5.19.4 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.4 of the connector.

#### 1.5.19.3

No issues specific to this connector were addressed in this release.

See 1.5.19.3 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.3 of the connector.

#### 1.5.19.2

No issues specific to this connector were addressed in this release.

See 1.5.19.2 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.2 of the connector.

#### 1.5.19.1

- OPENICF-1383: Workday Connector: Upgrade to API v35.0
- OPENICF-1419: Workday Connector: Implement Service Center Representative object type
- OPENICF-1426: Workday Connector: Ability to update email for Service Center Representative object
- OPENICF-1432: Workday Connector: Implement OR filter
- OPENICF-1447: Workday Connector: add the Contingent\_Worker\_ID as a search criteria

See 1.5.19.1 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.1 of the connector.

#### 1.5.19.0

No issues specific to this connector were addressed in this release.

See 1.5.19.0 in the Connector Framework release notes for details regarding any other changes that may affect version 1.5.19.0 of the connector.

### 1.5.18.0

#### Note

Starting in version 1.5.18.0, the ICF Connector Framework and all connectors bundled with IDM share a unified version number.

- No issues were addressed in this release.

### 1.5.3.0

- OPENICF-1291: Unnecessary logback dependency within Workday connector
- OPENICF-1283: Workday Connector: Bump up to ICF 1.5.11.0 and fix javadoc

### 1.5.1.0

- OPENICF-1193: Workday Connector: call to Sync() throws NPE when there are no changes detected
- OPENICF-1107: Workday Connector: Several problems with sync()
- OPENICF-1103: Workday Connector: Get Worker does a wrong query on update operation
- OPENICF-1102: Workday Connector: Include Related Persons information

### 1.5.0.0

- OPENICF-1096: Workday Connector: Update to ICF 1.5
- OPENICF-1095: Workday Connector: Change the connector license to CDDL
- OPENICF-858: Workday: ability to update any reference ID using Integrations web services
- OPENICF-857: Workday: fetch all the available employee information
- OPENICF-756: Workday: ability to read/query the Organizations

### 1.4.1.0

- OPENICF-1166: Workday Connector: Absence of Telephone data causes NPE
- OPENICF-1104: Workday Connector: handle worker picture data

### 1.4.0.0

Version 1.4.0.0 is bundled with IDM versions 6.0 and 6.5.0 by default.

- OPENICF-853: Workday - mobile is not updated if telephone is set
- OPENICF-845: Workday: Make page size configurable

- OPENICF-757: Workday: Implement paged queries
- OPENICF-751: Review Workday Connector