



LDAP Content Access Module

Configuration Guide
Version 2.1.0





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[1] Introduction

1.1 About this Document

	This document contains technical documentation for the LDAP Content Access Module and LDAP Content Query.
Intended Audience	This document is intended for use by engineers who are responsible for installing and managing the QuestFields system. Experience with LDAP is assumed.
Related Documents	For information about the QuestFields Server, please refer to the <i>QuestFields Server Administration Guide</i> . For information about the QuestFields Client, please refer to the <i>Autocomplete QuestField Administration Guide</i> .

1.2 LDAP Components Overview

LDAP Content Access Module	The LDAP Content Access Module (CAM) provides the connection between the QuestFields server and one or more LDAP servers. The CAM manages all physical aspects of interaction between the QuestFields system and the LDAP servers, including establishing a connection to an LDAP server, executing queries and extracting results.
Content Query	An LDAP Content Query logically defines an LDAP query that is used to search the LDAP server defined in the CAM for results that match the query. A Channel interprets QuestFields queries and triggers one or more Content Queries. LDAP Content Queries interact with the CAM to perform the query on the LDAP server and to return the results to the QuestFields Channel.

1.3 Version History

This chapter lists the changes for every release of this document.

- 1.0.0** - Covers the Reference Implementation of the LDAP Content Access Module for SunONE Directory Server.
- 1.0.1** - Added support for Siemens DirX Directory Server;
 - Added support for merging and sorting of Unicode data (see chapter 2.1.2);
 - All PeopleFinder-specific query setting attributes now start with "pf-" (see chapters (3.1.2 through **Error! Reference source not found.**).
 - Added query setting `pf-ldap.query.search-sub-tree` (see chapter 3.1.2);
 - Added query setting `pf-ldap.query.flag.content` (see chapter 3.1.2).
- 1.0.2** - Added generic sorting settings section (see new chapter 3.1.5)
- 2.0.0** - Updated the documentation to reflect version 2.0 of the QuestFields Server.
- 2.1.0** - Updated the documentation to reflect version 2.1 of the QuestFields Server.

[2] CAM Instance Configuration

Failover The LDAP Content Access Module provides failover capabilities by keeping an ordered list of directory server URLs and attempting to use each URL in turn until it is able to establish a successful connection. When asked to perform a query, the CAM attempts to establish a connection to the first LDAP server configured in the list.

The CAM waits up to a configurable timeout period for a connection to be setup. If a connection cannot be established, the CAM tries to establish a connection to the next LDAP server in the list. This process continues until a successful connection is established (or no LDAP servers are available). After establishing a successful connection to one of the LDAP servers in the list, the CAM will continue to connect to the same server, in order to minimize connection creation time by not stepping through the ordered list for every connection attempt.

After a configurable reset interval, the CAM will “reset” the failover list and start connection attempts from the first server in the list. This allows an administrator to ensure that the CAM will revert to connecting to the first server in the LDAP servers list even if that server was unavailable for a period of time.

2.1 Settings Reference

The LDAP Content Access Module instance is configured using the configuration file named `{cam_id}.xml`, located in the QuestFields CAM configuration directory, `OO_HOME/conf/cams`. The configuration file is in XML format and is encoded in the UTF-8 character encoding. The settings file can contain comments in standard XML format.

The Id of a Content Access Module instance, used internally in the QuestObjects system to identify the CAM instance, is the filename of the CAM’s configuration file, without the `.xml` suffix.

The file starts with `<ldapCam id="{cam_id}">` and ends with `</ldapCam>`.

Example CAM Configuration

```
<ldapCam id="ldap">  
  <userName></userName>  
  <password></password>  
    <authentication>none</authentication>  
  <connectTimeout>4000</connectTimeout>  
  <failoverResetInterval>60000</failoverResetInterval>  
    <supportsSortControls>>false</supportsSortControls>  
  <serverURLS>  
    <item>ldap://ldap.example.com:389/</item>  
  </serverURLS>  
</ldapCam>
```

2.1.1 Authentication settings

userName	<i>Use:</i> Username for accessing the LDAP servers. <i>Value type:</i> String. ⇒ <i>Note:</i> since no authentication is used this value is empty.
password	<i>Use:</i> Password for accessing the LDAP servers. <i>Value type:</i> String. ⇒ <i>Note:</i> since no authentication is used this value is empty.
authentication	<i>Use:</i> Authentication method for accessing the LDAP servers. <i>Value type:</i> String. ⇒ <i>Note:</i> since no authentication is used this value is set to none .

2.1.2 Connection settings

connectTimeout	<i>Use:</i> Timeout for establishing a new connection to an LDAP server. <i>Value type:</i> Positive integer representing number of milliseconds.
failoverResetInterval	<i>Use:</i> Interval after which to “reset” the failover list and start new connection attempts from the first LDAP server in the list. <i>Value type:</i> Positive integer representing number of seconds.
serverURLS	<i>Use:</i> An ordered list of directory server URLs. <i>Value type:</i> List of <item> elements.
item	<i>Use:</i> URL of one LDAP server in the list. <i>Value type:</i> URL string formatted as ldap://<host>:<port>/ . If the LDAP server is using the standard LDAP connection port (389), the URL can be written in the short format ldap://<host>/ .

supportsSortControls

Use: Boolean to determine whether the LDAP server supports search controls.

Value type: Boolean in the form of a String. This should be either `true` or `false`

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Content Query Configuration

The Content Query configuration contains settings for the LDAP query used, several additional items used in the query and the cam instance id for the LDAP Content Access Module.

3.1 Settings Reference

The Content Query is configured using the configuration file named `{content_query_id}.xml`, located in the QuestFields Content Query configuration directory, `QO_HOME/conf/content-queries`. The configuration file is in XML format and is encoded in the UTF-8 character encoding. The settings file can contain comments in standard XML format.

The Id of a channel, used internally in the QuestFields system to identify the channel, is the filename of the channel's configuration file, without the `.xml` suffix.

The file starts with `<ldapContentQuery id="{content_query_id}">` and ends with `</ldapContentQuery>`.

Attributes and Formatting

Each query defined in the configuration file has configurable settings that specify the alphabetical sorting of results, the attributes to extract for a person's details and their order and also how a person's name should be formatted.

The server assumes that the first attribute specified to extract is the key of the person's record. The QuestFields client uses this key when submitting values to the PeopleFinder details page.

The server assumes that the second and third attributes specified to extract make up the parts for a person's name. A person's name is formatted as a combination of these two attributes separated by an optional separator string. For example, if the second and third attributes are `surname` and `givenName` respectively, and the separator is configured to be a comma, the resulting formatting for a person's name will be `surname, givenName`.



Example Content Query Configuration

```
<ldapContentQuery id="lastname">
  <query><![CDATA[sn=@lastName@*]]></query>
  <camId>ldap</camId>
  <sortKeys>
    <item>sn</item>
    <item>givenName</item>
  </sortKeys>
  <attributes>
    <item>uid</item>
    <item>sn</item>
    <item>givenName</item>
    <item>telephoneNumber</item>
    <item>mail</item>
  </attributes>
  <searchBase>ou=People, o=Company Data</searchBase>
  <flagAttribute>objectClass</flagAttribute>
  <flagValues>
    <item>ContingentWorker</item>
    <item>nonOrgPerson</item>
  </flagValues>
  <flagContent>External</flagContent>
  <searchSubTree>>false</searchSubTree>
  <concatString>, </concatString>
</ldapContentQuery>
```

3.1.1 Content Access Module settings

camId *Use:* Instance Id of the CAM used by the Content Query (as defined in chapter 2.1).
Value type: String containing the Id of the CAM.

3.1.2 Query settings

query *Use:* The LDAP query to be performed for the channel. The part of the query that needs to be filled in by the server is defined within @ characters. The word between the @ characters seen as a key for which the Channel needs to fill with a value for the Content Query to execute. See the QuestFields Server Administration guide for more information. Multiple keys are allowed.

Value type: String or CDATA block representing an LDAP query.

searchBase *Use:* The LDAP search base.

Value type: String.

sortKeys *Use:* Ordered list of Attributes passed to LDAP server on which to sort the results for the first name query.



attributes	<p><i>Value type:</i> A list of <code><item></code> elements. Each <code><item></code> element contains a String with an Attribute.</p> <p><i>Use:</i> Ordered list of Attributes to extract from the LDAP results for the first name query for one person's details.</p>
searchSubTree	<p><i>Value type:</i> A list of <code><item></code> elements. Each <code><item></code> element contains a String with an Attribute.</p> <p><i>Use:</i> The LDAP search depth that determines if the search is done in the sub-tree of the base or just on the level below the base.</p>
flagAttribute	<p><i>Value type:</i> Boolean in the form of a String. This should be either <code>true</code> or <code>false</code></p> <p><i>Use:</i> Attribute to check for a person's status in order to determine if the person needs to be flagged.</p>
flagValues	<p><i>Value type:</i> String representing name of attribute.</p> <p><i>Use:</i> Values of the attribute for a person's status, which determine if the person needs to be flagged.</p>
flagContent	<p><i>Value type:</i> A list of <code><item></code> elements. Each <code><item></code> element contains a String with a value.</p> <p><i>Use:</i> The actual flag string that shows up in the QuestField. For example: "external".</p> <p><i>Value type:</i> A String.</p>



[4]

Glossary

CAM	A Content Access Module (CAM) provides a standardized mechanism to link the QuestFields system to a Content Engine. A CAM is the “middleware” between the QuestFields system and the content sources it works with. Different Content Access Modules are needed to communicate with various content sources, such as JDBC-compliant SQL databases (through the JDBC CAM), LDAP-compliant directory servers (through the LDAP CAM), or flat files (through the QuestFields Indexer CAM).
Content Channel	One of the services configured on the QuestFields Server, linking a QuestField to one or more Content Queries and returning appropriate results from those Content Queries.
Content Query	A pre-configured query for a specific CAM. To be used by that CAM to return results (answers) to the QuestFields system.
JDBC	Java Database Connectivity (JDBC) is a standard application program interface specification for connecting programs to the data in popular databases.
LDAP	Lightweight Directory Access Protocol (LDAP) is a standard application program interface for connecting programs to the data in corporate directories.
QuestField	A user interface element that sends queries to, and receives results from the QuestFields Server.