

Endeca® Content Acquisition System

Microsoft SharePoint Connector Guide

Version 3.0.1 • December 2011



Contents

Preface.....	7
About this guide.....	7
Who should use this guide.....	7
Conventions used in this guide.....	7
Contacting Endeca Customer Support.....	8
 Chapter 1: Introduction.....	 9
Determining which SharePoint connector to use.....	9
 Chapter 2: Configuring the SharePoint Object Model connector.....	 11
SharePoint versions supported by the SharePoint Object Model connector.....	11
Installing a SharePoint solution on the SharePoint server.....	11
Uninstalling the SharePoint solution from the SharePoint server.....	12
Configuration properties for the Microsoft SharePoint Object Model connector.....	13
Additional configuration notes for the SharePoint Object Model connector.....	14
Permission mapping for the SharePoint Object Model connector.....	16
 Chapter 3: Configuring the SharePoint Web Services connector.....	 17
SharePoint versions supported by the SharePoint Web Services connector.....	17
Configuration properties for a Microsoft SharePoint connector.....	17
Additional configuration notes for the SharePoint Web Services connector.....	19
Permission mapping for the SharePoint Web Services connector.....	20



Copyright and disclaimer

Product specifications are subject to change without notice and do not represent a commitment on the part of Endeca Technologies, Inc. The software described in this document is furnished under a license agreement. The software may not be reverse engineered, decompiled, or otherwise manipulated for purposes of obtaining the source code. The software may be used or copied only in accordance with the terms of the license agreement. It is against the law to copy the software on any medium except as specifically allowed in the license agreement.

No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, for any purpose without the express written permission of Endeca Technologies, Inc.

Copyright © 2003-2011 Endeca Technologies, Inc. All rights reserved. Printed in USA.

Portions of this document and the software are subject to third-party rights, including:

Outside In® Search Export Copyright © 2011 Oracle. All rights reserved.

Rosette® Linguistics Platform Copyright © 2000-2011 Basis Technology Corp. All rights reserved.

Teragram Language Identification Software Copyright © 1997-2005 Teragram Corporation. All rights reserved.

Trademarks

Endeca, the Endeca logo, Guided Navigation, MDEX Engine, Find/Analyze/Understand, Guided Summarization, Every Day Discovery, Find Analyze and Understand Information in Ways Never Before Possible, Endeca Latitude, Endeca InFront, Endeca Profind, Endeca Navigation Engine, Don't Stop at Search, and other Endeca product names referenced herein are registered trademarks or trademarks of Endeca Technologies, Inc. in the United States and other jurisdictions. All other product names, company names, marks, logos, and symbols are trademarks of their respective owners.

The software may be covered by one or more of the following patents: US Patent 7035864, US Patent 7062483, US Patent 7325201, US Patent 7428528, US Patent 7567957, US Patent 7617184, US Patent 7856454, US Patent 7912823, US Patent 8005643, US Patent 8019752, US Patent 8024327, US Patent 8051073, US Patent 8051084, Australian Standard Patent 2001268095, Republic of Korea Patent 0797232, Chinese Patent for Invention CN10461159C, Hong Kong Patent HK1072114, European Patent EP1459206, European Patent EP1502205B1, and other patents pending.

Preface

Endeca® InFront enables businesses to deliver targeted experiences for any customer, every time, in any channel. Utilizing all underlying product data and content, businesses are able to influence customer behavior regardless of where or how customers choose to engage — online, in-store, or on-the-go. And with integrated analytics and agile business-user tools, InFront solutions help businesses adapt to changing market needs, influence customer behavior across channels, and dynamically manage a relevant and targeted experience for every customer, every time.

InFront Workbench with Experience Manager provides a single, flexible platform to create, deliver, and manage content-rich, multichannel customer experiences. Experience Manager allows non-technical users to control how, where, when, and what type of content is presented in response to any search, category selection, or facet refinement.

At the core of InFront is the Endeca MDEX Engine,[™] a hybrid search-analytical database specifically designed for high-performance exploration and discovery. InFront Integrator provides a set of extensible mechanisms to bring both structured data and unstructured content into the MDEX Engine from a variety of source systems. InFront Assembler dynamically assembles content from any resource and seamlessly combines it with results from the MDEX Engine.

These components — along with additional modules for SEO, Social, and Mobile channel support — make up the core of Endeca InFront, a customer experience management platform focused on delivering the most relevant, targeted, and optimized experience for every customer, at every step, across all customer touch points.

About this guide

This guide describes the tasks necessary to configure the Microsoft Sharepoint Web Services connector and also the Microsoft Sharepoint Object Model connector.

It assumes familiarity with the concepts of the Endeca Content Acquisition System and the Endeca Information Transformation Layer. For more information, see the *Endeca CAS Developer's Guide* and the *Endeca Forge Guide*.

Who should use this guide

This guide is intended for application developers who are building applications using the Endeca Content Acquisition System, and are responsible for gathering, crawling, joining and feeding the data in different source formats into the Endeca pipeline to transform them into Endeca records.

Conventions used in this guide

This guide uses the following typographical conventions:

Code examples, inline references to code elements, file names, and user input are set in `monospace` font. In the case of long lines of code, or when inline monospace text occurs at the end of a line, the following symbol is used to show that the content continues on to the next line: ↵

When copying and pasting such examples, ensure that any occurrences of the symbol and the corresponding line break are deleted and any remaining space is closed up.

Contacting Endeca Customer Support

The Endeca Support Center provides registered users with important information regarding Endeca software, implementation questions, product and solution help, training and professional services consultation as well as overall news and updates from Endeca.

You can contact Endeca Standard Customer Support through the Support section of the Endeca Developer Network (EDeN) at <http://eden.endeca.com>.



Chapter 1

Introduction

This section provides guidance to determine which SharePoint connector is appropriate for your application.

Determining which SharePoint connector to use

Both SharePoint connectors allow CAS to communicate with a SharePoint repository. However, each connector communicates with SharePoint using a different type of interface. The SharePoint Object Model connector uses a custom Web Service that is implemented using the SharePoint Object Model API. The SharePoint Web Services connector uses the default SharePoint Web Services interface.

Typically, the type of interface that a CAS connector uses would be a transparent implementation detail. In this case, the interface type may have capability limitations that may affect your application.

The following list provides guidance to determine which connector is more suited to your needs:

- If you need to crawl either SharePoint Portal Server 2003 (SPS 2003) or Windows SharePoint Services 2.0 (WSS 2.0), then you should use the SharePoint Web Services connector. The SharePoint Object Model connector does not support those versions of SharePoint.
- If you need to crawl document-level ACL properties, then you should use the SharePoint Object Model connector. The SharePoint Web Services connector does not support crawling document-level ACL properties; however, it does support crawling site-level ACL properties.
- The SharePoint Object Model connector requires that the "SharePoint solution deployment" be installed on the server running SharePoint. If you cannot install additional software on that server, you may have to use the SharePoint Web Services connector.
- The SharePoint Web Services connector has better performance than the SharePoint Object Model connector.



Chapter 2

Configuring the SharePoint Object Model connector

This section describes how to set up the CAS Server and to set configuration properties for the SharePoint Object Model connector. See the Endeca CAS API Guide for details on crawling a SharePoint repository using the CAS API.

SharePoint versions supported by the SharePoint Object Model connector

The SharePoint Object Model connector supports the following versions of SharePoint:

- Microsoft Office SharePoint Server 2007 (MOSS 2007)
- Windows SharePoint Services 3.0 (WSS 3.0)
- SharePoint Server 2010
- SharePoint Foundation Server 2010

The connector supports Basic authentication and NTLM authentication (Integrated Windows Authentication). All NTLM variations are supported including LM, NTLM, LMv2 and NTLMv2.

Installing a SharePoint solution on the SharePoint server

Before you can configure the SharePoint Object Model connector, you must install a SharePoint solution on the SharePoint server. This task is not required if you are using the SharePoint Web Services connector.

The CAS installation redistributes a SharePoint solution. The SharePoint solution contains an agent (a SOAP web service assembly) that allows the connector to communicate with the SharePoint server.

The user installing the SharePoint solution must have the following roles in SharePoint:

- Farm Administrator
- Site Collection Administrator
- db_owner (content database of the administration site)

The SharePoint solution installs the following assemblies into the global assembly cache:

- `Microsoft.Web.Services2.dll`

- Entropysoft.Sharepoint.WebService.dll
- Entropysoft.WebConfModif.dll

To install the SharePoint solution:

1. Navigate to <install path>\CAS\version\cms\sharepoint-om.
2. Copy EntropySoft-SharePoint-Conn-Setup.exe to a temporary directory accessible from the SharePoint server.
3. Start the Windows SharePoint Services Administration service on the SharePoint server.
4. Double-click EntropySoft-SharePoint-Conn-Setup.exe. The SharePoint connector installation program starts.
5. Click **Yes**.
6. Click **Next** to continue.
The installation program performs a number of preliminary checks. If one of these checks fail, correct the problem and restart the installation program to continue.
7. Accept the EntropySoft license agreement and click **Next** to continue.
8. On the Deployment Targets screen, select the SharePoint Web site(s) to deploy the connector to. You may need to select multiple Web sites if you have a SharePoint server farm.
There is normally no need to deploy the connector to SharePoint administrative sites.
9. Click **Next** to continue.
10. Click **Close**.

The installation program copies the files and deploys the connector to all members of the selected SharePoint farm.

After installation, you can verify that the SharePoint connector solution has been correctly deployed to the server, or server farm, by connecting to SharePoint Central Administration, clicking the Operations tab, then selecting Solution management in the Global Configuration section.

Uninstalling the SharePoint solution from the SharePoint server

Follow this procedure to uninstall the SharePoint solution from the SharePoint server.

To uninstall the SharePoint solution:

1. Start the Windows SharePoint Services Administration service on the SharePoint server.
2. Go to the SharePoint 3.0 Central Administration console.
3. Click the **Operations** tab.
4. Under Global Configuration, click **Solution Management**.
You should see entropysoft.sharepoint.webservice.wsp in the list of installed solutions.
5. Click entropysoft.sharepoint.webservice.wsp.
6. Click **Retract Solution**.
7. Ensure that **Now** is selected under When to retract solution.
8. Click **OK** to retract the solution now.
9. Refresh the Solution Management page until the status of the entropysoft.sharepoint.webservice.wsp solution is Not Deployed.

10. Click `entropysoft.sharepoint.webservice.wsp`.
11. Click **Remove Solution** and click **OK** in the confirmation prompt.

Configuration properties for the Microsoft SharePoint Object Model connector

To configure a Microsoft SharePoint Object Model connector, specify the configuration properties listed below.



Note: In addition to configuring the connector-specific properties listed below, you must enter values for the data source username and password.

Create the following configuration properties using either CAS Console or the CAS Server Command-line Utility.

CAS Property Display Name	CAS Property Name	Property Description
SharePoint site URL	sharepointConnectorUrl	(Required). The SharePoint server name and port, such as <code>http://sharepoint:10000</code> . The <code>sharepointConnectorUrl</code> can only be set to the repository site or the home SharePoint site collection. The <code>sharepointConnectorUrl</code> cannot be set to a Document Library. <code>sharepointConnectorUrl</code> names are case sensitive.
Enable HTTP Chunking	httpChunkingEnabled	(Optional). Enable this property to use chunked encoding for HTTP messages. Enter <code>true</code> or <code>false</code> . The default value is <code>true</code> .
Domain	domain	(Required for NTLM authentication, otherwise optional.) In order to authenticate to SharePoint using NTLM, the domain name must be specified to log on to the server. For non-NTLM authentication, this is a convenience property for prepending the value of this property to the username property. The domain will be appended with a backslash separating it from the username.

CAS Property Display Name	CAS Property Name	Property Description
		Endeca recommends specifying the domain only in the username property and not adding this property, for clarity.
Check SSL Certificate	<code>strictSSLChecking</code>	(Optional). Specify whether all SSL certificates are accepted, including self-signed certificates. If set to <code>true</code> , only trusted SSL certificates are accepted. The default value is <code>false</code> .
Socket timeout	<code>socketTimeout</code>	(Optional). Specify a timeout value (in milliseconds) for content retrieval. The default value is 15 seconds (15000 milliseconds).



Note: Properties are case sensitive.

Additional configuration notes for the SharePoint Object Model connector

Note the following when configuring the SharePoint Object Model connector.

- When crawling lists, the SharePoint connector ignores SharePoint filters and views and crawls all items in the list.

Configuring `sharepointConnectorUrl` and seeds

- Specify each site collection as its own `sharepointConnectorUrl` configuration property rather than as a seed. CAS will only crawl a site collection if it is specified in the `sharepointConnectorUrl`. For example, a `sharepointConnectorUrl` of `http://sharepoint:1000/engineering` crawls the site collection named `engineering`. In some cases, a site collection contains a prefix name. If a prefix name exists, it must be specified in the `sharepointConnectorUrl`. This configuration requirement means that if you want to crawl multiple site collections, you should create a SharePoint data source for each site collection. This is necessary because each site collection has its own independent scope for document types, groups, security settings, user accounts, and so on.
- When crawling MySites, specify the `sharepointConnectorUrl` as `http://host:port/personal/username` rather than `http://host:port/MySite`. SharePoint treats MySites as separate repositories or site collections.
- The value `/personal/username` must be included in the `sharepointConnectorUrl` and not the seed. For example, when using the `sharepointConnectorUrl` `http://sharepoint:1000`, an invalid seed is `/personal/username/Shared Documents`.
- The `sharepointConnectorUrl` can be used to specify specific subsites and supports nesting. For example, `http://sharepoint:1000/subsite1/subsite2` is a valid `sharepointConnectorUrl`.

- Specify seeds as relative to the `sharepointConnectorUrl` site collection or repository. For example, when using the `sharepointConnectorUrl` `http://sharepoint:1000`, a valid seed is `/Shared Documents/Word Docs`.
- Seed URLs are automatically encoded; do not encode seed URLs. For example, do not use "%20" to denote spaces; use spaces if needed in the URL. When crawling lists, do not specify the seed as the navigation url (such as `/Lists/ListName`); simply specify `/ListName`.

Required permissions in SharePoint 2007 and SharePoint 2010

- The minimum requirement for a SharePoint 2007 user account is the Read permission level. The Read permission level includes the following permissions: View Items, Open Items, View Versions, Create Alerts, View Application Pages, Use Self-Service Site Creation, View Pages, Browse User Information, Use Remote Interfaces, Use Client Integration Features, and Open. If there is additional content you want to crawl that is not accessible with that permission level, the user account or the content may need additional permissions.
- When crawling a SharePoint repository, users need the Enumerate Permissions setting. This permission can be added as an advanced permission setting in SharePoint, or you can set it as part of the default Full Control permission level.
- If a user has the Full Control or Manage Lists permission level, the crawl creates records for all content items including Galleries. (A record based on a Gallery item typically does not contain content that should be available in a search application.)

Limitations related to permissions

The CAS Server does not crawl certain SharePoint constructs due to permission limitations imposed by SharePoint Web services:

- The CAS Server logs an `InvalidCredentialsException` when crawling Topics or News constructs. No records are output for these constructs and the crawler will continue its processing as normal.

Limitations crawling galleries

The SharePoint Object Model connector does not support crawling the following galleries:

- Web Part Gallery
- Site Template Gallery
- List Template Gallery
- Master Page Gallery

Limitations when using SharePoint 2007 and SharePoint Services 3.0

These limitations apply:

- Target audiences are not supported. There is no way to return the target audience of an item.
- Audience filtering is not supported.
- Content types are not supported.
- The `NoCrawl` property for lists and sites is not available.

Permission mapping for the SharePoint Object Model connector

The following table shows the mapping between SharePoint permissions and the resulting Endeca record properties that are produced.

SharePoint Site permission	Endeca record properties
ViewPages	Endeca.CMS.AllowReadProperties

SharePoint List permission	Endeca record properties
ViewListItems	Endeca.CMS.AllowReadProperties

SharePoint permission	Endeca record properties
ViewListItems	Endeca.CMS.AllowReadProperties Endeca.CMS.AllowReadContent



Chapter 3

Configuring the SharePoint Web Services connector

This section describes how to set up the CAS Server and to set configuration properties for the SharePoint Web Services connector. See the Endeca CAS API Guide for details on crawling a Microsoft SharePoint repository using the CAS API.

SharePoint versions supported by the SharePoint Web Services connector

The Microsoft SharePoint Web Services connector supports the following versions of SharePoint:

- SharePoint Portal Server 2003 (SPS 2003)
- Windows SharePoint Services 2.0 (WSS 2.0)
- Windows SharePoint Services 3.0 (WSS 3.0)
- Microsoft Office SharePoint Server 2007 (MOSS 2007)
- SharePoint Server 2010
- SharePoint Foundation Server 2010

The connector supports Basic authentication and NTLM authentication (Integrated Windows Authentication). All NTLM variations are supported including LM, NTLM, LMv2 and NTLMv2.

Configuration properties for a Microsoft SharePoint connector

To configure a Microsoft SharePoint connector, specify the configuration properties listed below.



Note: In addition to configuring the connector-specific properties listed below, you must enter values for the data source username and password.

Create the following configuration properties using either CAS Console or the CAS Server Command-line Utility.

CAS Property Display Name	CAS Property Name	Property Description
SharePoint Site URL	siteUrl	(Required). The SharePoint server name and port, such as <code>http://sharepoint:10000</code> . The <code>siteUrl</code> can only be set to the repository site or the home SharePoint site collection. The <code>siteUrl</code> cannot be set to a Document Library. <code>siteUrl</code> names are case sensitive.
Generic Lists Support	handleGenericLists	(Optional). By default, the connector manages document libraries. Enable this property to support additional Sharepoint lists such as Issues, Wiki, Surveys, custom lists. The default value is <code>true</code> .
Enable HTTP Chunking	httpChunkingEnabled	(Optional). Enable this property to use chunked encoding for HTTP messages. Enter <code>true</code> or <code>false</code> . The default value is <code>true</code> .
Domain	domain	<p>(Required for NTLM authentication, otherwise optional.)</p> <p>In order to authenticate to SharePoint using NTLM, the domain name must be specified to log on to the server.</p> <p>For non-NTLM authentication, this is a convenience property for prepending the value of this property to the username property. The domain will be appended with a backslash separating it from the username. Endeca recommends specifying the domain only in the username property and not adding this property, for clarity.</p>
Check SSL Certificate	strictSSLChecking	(Optional). Specify whether all SSL certificates are accepted, including self-signed certificates. If set to <code>true</code> , only trusted SSL certificates are accepted. The default value is <code>false</code> .



Note: Properties are case sensitive.

Additional configuration notes for the SharePoint Web Services connector

Note the following when configuring the SharePoint Web Services connector.

- The SharePoint connector uses the standard SharePoint Web services API. To retrieve the content of a document, the connector directly uses HTTP or HTTPS GET.
- When crawling lists, the SharePoint connector ignores filters and views and crawls all items in the list.
- Due to a SharePoint 2003 Web services defect, crawling Meeting Workspaces causes the server to queue child pages such as Workspace Pages that do not exist, which in turn causes an Exception error message during a crawl. The crawl finishes processing documents correctly in the Document Library.

Configuring `siteUrl` and seeds

- When crawling MySites, specify the `siteUrl` as `http://host:port/personal/username` rather than `http://host:port/MySite`. SharePoint treats MySites as separate repositories or site collections.
- The value `/personal/username` must be included in the `siteUrl` and not the seed. For example, when using the `siteUrl` `http://sharepoint:1000`, an invalid seed is `/personal/username/Shared Documents`.
- The `siteUrl` can be used to specify specific subsites and supports nesting. For example, `http://sharepoint:1000/subsite1/subsite2` is a valid `siteUrl`.
- Specify seeds as relative to the `siteUrl` site collection or repository. For example, when using the `siteUrl` `http://sharepoint:1000`, a valid seed is `/Shared Documents/Word Docs`.
- Seed URLs are automatically encoded; do not encode seed URLs. For example, do not use "%20" to denote spaces; use spaces if needed in the URL. When crawling lists, do not specify the seed as the navigation url (such as `/Lists/ListName`); simply specify `/ListName`.

Required permissions in SharePoint 2003

- The minimum requirement for a SharePoint 2003 user account is membership in the Reader Site Group. The Reader Site Group includes the following permissions: View Area, View Pages, and Search. If there is additional content you want to crawl that is not accessible with that permission, the user account or the content may need additional permissions.

Required permissions in SharePoint 2007

- The minimum requirement for a SharePoint 2007 user account is the Read permission level. The Read permission level includes the following permissions: View Items, Open Items, View Versions, Create Alerts, View Application Pages, Use Self-Service Site Creation, View Pages, Browse User Information, Use Remote Interfaces, Use Client Integration Features, and Open. If there is additional content you want to crawl that is not accessible with that permission level, the user account or the content may need additional permissions.

- When crawling a SharePoint repository, users need the Enumerate Permissions setting. This permission can be added as an advanced permission setting in SharePoint, or you can set it as part of the default Full Control permission level.
- If a user has the Full Control or Manage Lists permission level, the crawl creates records for all content items including Galleries. (A record based on a Gallery item typically does not contain content that should be available in a search application.)

Limitations related to permissions

The CAS Server does not crawl certain SharePoint constructs due to permission limitations imposed by SharePoint Web services:

- The CAS Server logs an `InvalidCredentialsException` when crawling Topics or News constructs. No records are output for these constructs and the crawler will continue its processing as normal.
- This applies to SharePoint 2003 only. The CAS Server does not directly crawl a SharePoint Area when specified as a siteURL. An Area must be specified as a seed and not as a siteUrl. However, the CAS Server can crawl specific content within an Area, such as a Document Library, if that content is specified as a seed. The CAS Server cannot retrieve permissions for a SharePoint Area.

Limitations when using SharePoint 2007, SharePoint Services 3.0, and SharePoint 2010

These limitations apply:

- SharePoint 2007 supports security at the item level but the connector's Web services do not. An item's returned permissions are the permissions of the list containing the item.
- Target audiences are not supported. There is no way to return the target audience of an item.
- Audience filtering is not supported.
- Content types are not supported.
- The `NoCrawl` property for lists and sites is not available.

Permission mapping for the SharePoint Web Services connector

The following table shows the mapping between SharePoint permissions and the resulting Endeca record properties that are produced.

SharePoint permission	Endeca record properties
View Items	<code>Endeca.CMS.AllowReadProperties</code> <code>Endeca.CMS.AllowReadContent</code>