SharePoint Classifier

Overview

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1   Introduction

This document summarises the features supported by Boldon James SharePoint Classifier.

SharePoint Classifier extends SharePoint to present Classifier applied label values in document library columns. Uploading a labelled file will propagate the label into the document library columns. Items already in a document library can have label values applied and changed using SharePoint Classifier.

The label values supported are as defined by a Classifier Configuration as established using Classifier Administration. See the Classifier Administration Guide, ref [1], for details on running Classifier Administration.

See SharePoint Classifier Functionality for a description of the functionality that SharePoint Classifier provides.

1.1   Audience

This document is aimed towards people planning and managing SharePoint Classifier software.

1.2   Classifier Document References

Documents relating to Classifier software can be found under the Classifier Documentation folder in the Base bundle.

[1]   Classifier Administration Guide (UM6351)

[2]   Understanding permission levels in SharePoint   (external link)

[3]   SharePoint Classifier Deployment Guide (UM6470)

1.3   Terminology

CSOM   SharePoint Client-Side Object Model
JSOM   SharePoint JavaScript Object Model

2   Architecture Overview

SharePoint Classifier is a loosely coupled model using public APIs and extensibility frameworks. This allows consistent functionality across all of the SharePoint platforms supported by SharePoint Classifier and includes platforms such as SharePoint Online in Office 365 where full trust solutions are not supported.

The product is supplied as part of the SharePoint Classifier Bundle which contains:

- Boldon James SharePoint Classifier Website for Clients.
- Boldon James SharePoint Classifier Configuration Sweeper Service.
- Boldon James SharePoint Classifier Item Sweeper Service.
- Boldon James SharePoint Classifier PowerShell Configuration.

The SharePoint Classifier Website for Clients provides the Classifier configuration for the SharePoint Client label dialog. This website installs into an IIS website on a Windows Server. This IIS website must be accessible from all client machines where users will be accessing the SharePoint Classifier functionality.

The SharePoint Classifier Configuration Sweeper Service is a Windows Service that monitors the SharePoint environment for changes to the SharePoint configuration using the SharePoint client-side object model (CSOM) API. This service monitors the SharePoint environment for changes using the SharePoint Change Log and enables/disables the SharePoint Classifier functionality on document libraries based on settings on the SharePoint property bags at the site collection, site and document library level.

The SharePoint Classifier Item Sweeper Service is a Windows Service that monitors the SharePoint environment for changes to the items in document libraries using the SharePoint client-side object model (CSOM) API. This service monitors the SharePoint environment for changes using the SharePoint Change Log and applies SharePoint Classifier functionality to items in document libraries when the items are changed. The SharePoint Classifier functionality is derived from settings on the SharePoint property bags at the site collection, site and document library level.

The SharePoint Classifier PowerShell Configuration allows the SharePoint Classifier settings to be read, written and removed from the SharePoint property bags at the site collection, site and document library level using the SharePoint client-side object model (CSOM) API.

These four separate components work together to allow SharePoint Classifier to be configured and provide the SharePoint Classifier Functionality.

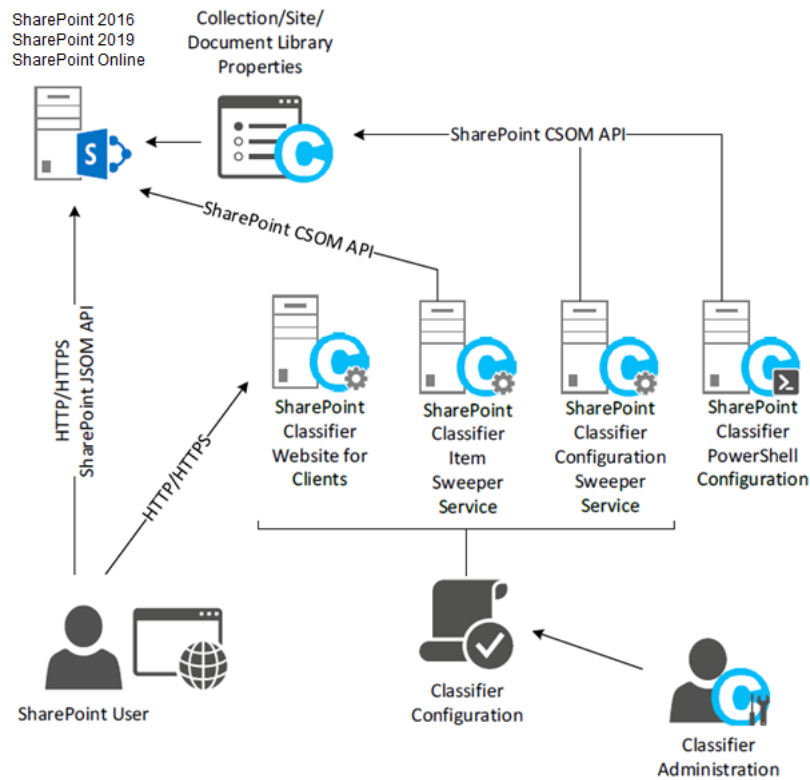Figure 1: shows an overview of the SharePoint Classifier architecture.

Figure 1: Overview of the SharePoint Classifier architecture

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3   SharePoint Classifier Functionality

SharePoint Classifier allows Classifier classifications to be shown on fields in a SharePoint document library. Fields are created to hold the Classifier selector values and a summary marking value showing the complete classification. The fields shown are dependent on the Classifier selectors in the Classifier Configuration Policy that is in use by the Boldon James SharePoint Classifier Configuration Sweeper Service monitoring the site collection that contains the document library.

Classifications on SharePoint document library items can be set within SharePoint using the SharePoint Classifier label dialog. The SharePoint Classifier label dialog applies SharePoint Classifier rules to ensure any classification selected by the user is valid.

Note: The SharePoint Classifier label dialog can only classify a single file. If several files need to be classified simultaneously, it is recommended that Boldon James Power Classifier for SharePoint be used.

SharePoint Classifier supports SharePoint item file types which are and are not natively classified by Classifier.

Files types which are natively classified by Classifier use the classification contained within the file as the primary Classification.

- When a natively classified file type has its classification updated using the SharePoint Classifier label dialog then the classification contained within the file is updated with the new Classification. This updated classification is then used by any Classifier application which subsequently accesses this file. This is correct for whether the file is accessed from within SharePoint or if the file is moved outside of the SharePoint environment.
- When a natively classified file type has its classification updated by an application outside of SharePoint then this updated classification is reflected on the item in SharePoint by SharePoint Classifier.

File types which are not natively classified by Classifier have a Classification that only resides in the SharePoint environment. When the file is accessed by any other Classifier application or moved from the SharePoint environment then the classification defined by SharePoint Classifier is lost.

The Classifier classification on document library items can have certain SharePoint Classifier specific functionality applied to them.

3.1   Apply Default Classification

It is possible to apply a default classification to unclassified items in a SharePoint Classifier enabled document library when the item is added or updated.

See the SharePoint Classifier Configuration section of the SharePoint Classifier Deployment Guide, ref [3], on how to configure this functionality.

3.2   Quarantine Items with Inappropriate Classification

When an item is added or updated in a SharePoint Classifier enabled document library with an inappropriate classification it can be quarantined until an appropriate Classification is set on the item.

When an inappropriate classification is detected, the item can be either moved to a quarantine list or have its permissions modified to stop other users seeing and accessing the item.

3.2.1　Inappropriate Classification Reasons

3.2.1.1　Classifier Clearance Failure

Classifier Clearances can be applied to SharePoint Classifier enabled document libraries. These Classifier Clearances define which Classifier classification elements are valid for these document libraries.

When an item is added or updated with a classification containing one of more Classifier classification elements that are not in the Classifier Clearance then the item is quarantined until a classification appropriate for this document library's Classifier Clearance is selected.

See the SharePoint Classifier Configuration section of the SharePoint Classifier Deployment Guide, ref [3], on how to configure this functionality.

3.2.1.2　Unclassified Failure

When an item in a SharePoint Classifier enabled document library is added or updated, it can be quarantined if it does not have a classification set. This stops items with no classification being added or updated in a SharePoint Classifier enabled document library. The item is quarantined until a classification appropriate for this document library is selected.

See the SharePoint Classifier Configuration section of the SharePoint Classifier Deployment Guide, ref [3], on how to configure this functionality.

3.2.1.3　Missing Mandatory Element Failure

When an item in a SharePoint Classifier enabled document library is added or updated, it can be quarantined if it does not pass a **Check these mandatory selectors** rule configured with a prevent action. This stops items with an incomplete classification being added or updated in a SharePoint Classifier enabled document library. The item is quarantined until a classification appropriate for this document library is selected.

See the SharePoint Classifier Configuration section of the SharePoint Classifier Deployment Guide, ref [3], on how to configure this functionality.

3.2.2　Quarantine Options

There are two options for quarantining items in SharePoint Classifier:

- Moving the items to a quarantine list
- Have the items' permissions modified to stop other users seeing and accessing the items.

3.2.2.1　Quarantine List

This is special type of SharePoint Classifier enabled document library with the **Is this a Quarantine List?** setting enabled. This special type of SharePoint Classifier enabled document library has extra options added to the document library ribbon buttons and context menu. These options allow items to be restored to their original document library locations after an appropriate classification has been applied.

This type of quarantining occurs when the **Use Permissions Modification for Quarantining** setting is disabled or not present on a SharePoint Classifier enabled document library and the **Quarantine Site URL** and **Quarantine List Name** settings are configured correctly.

Note: The **Quarantine Site URL** must exist, the **Quarantine List Name** setting must be correct and the **Is this a Quarantine List?** setting must be enabled before this type of quarantining can occur. If these settings are incorrect then quarantining will not occur.

When an inappropriate item is moved to a Quarantine List:

- The item is moved to the Quarantine List.
- The inappropriate label on this item is shown in the Quarantine List.

To restore an item from a Quarantine List:

- Select a classification which is appropriate for the original document library which contained this item. This can be achieved using the SharePoint Classifier label dialog or using other Classifier applications which can natively label this item's file type.
- Select the **Restore Item** option from the ribbon bar or item context menu in the quarantine list.
- In the Restore Item dialog choose to restore the item.
- The item will be moved back to the original document library and the appropriate classification which has been selected will be shown on the item in the original document library.

Note: If an inappropriate classification is present on the item when it is restored it will be returned to the quarantine list.

Note: The quarantine list must be in the same site collection as the document libraries which are using it. Document libraries cannot use a quarantine list outside of their site collection. If a quarantine list outside of the site collection is used then quarantining will fail because the item cannot be moved to the quarantine list.

Note: Multiple quarantine lists can be configured within a site collection.

Note: Quarantine lists can be shared between multiple document libraries in a site collection.

3.2.3   Permissions Modification

This type of quarantining occurs when the **Use Permissions Modification for Quarantining** settings is enabled for a SharePoint Classifier enabled document library.

This type of quarantining modifies the permissions on the item in the document library to stop other users seeing and accessing the item until an appropriate classification for the document library has been selected.

When an item is quarantined, the item in the document library has:

- Permission inheritance removed from the item.
- The user making the inappropriate change has edit permissions assigned to the item so they can set an appropriate classification or remove the item from the document library.
- Users with **Manage List** permissions for that document library have their permissions left on the item. This allows users who have the relatively high-level permissions to manage the list can set an appropriate classification or remove the item from the document library.
- All other users have permissions removed from the item so they cannot see or access the item.

When an appropriate classification is applied to the item, it has:
- Permission inheritance restored on the item.
- All of the modified permissions assigned to the item by SharePoint Classifier are removed

when permission inheritance is restored. This allows all users to see and access the item with the same inherited permissions they had before the item was quarantined.

Note: SharePoint Classifier quarantine permissions modification relies on inherited permissions. If an item within a document library has permissions inheritance disabled then it will have permissions inheritance enabled after it has had SharePoint Classifier quarantine permissions modifications applied.

3.2.4   Quarantine Notification Email

When an item is quarantined using either a quarantine list or permissions modification a notification is sent to the user who added or update the item with the inappropriate classification. The notification is sent though the SharePoint environment's email functionality.

This email can only be sent when:

- The user's profile in SharePoint contains their correct email address.
- The SharePoint environment is configured to allow outgoing email.

3.3   Adding SharePoint Classifier functionality to a Document Library

SharePoint Classifier functionality is added onto a document library by setting the Enabled setting to the correct value. This will enable the basic SharePoint Classifier functionality on the document library. Other functionality can be enabled by setting the Supported Settings with values appropriate to your environment.

Enabling and configuring SharePoint Classifier can be achieved using the Default SharePoint Classifier Settings, Boldon James SharePoint Classifier Settings, PowerShell Configuration or setting SharePoint property bag setting directly.

See the SharePoint Classifier Deployment Guide, ref [3], for more detail.

Note: SharePoint Classifier will not process all document libraries in a SharePoint environment. There are some document libraries hidden from the user that are used by SharePoint.

3.4   User View of SharePoint Classifier

Adding SharePoint Classifier functionality to a Document Library enhances the Library View to display Label value information. SharePoint Classifier is supported in both the Classic View and Modern Experience.

3.4.1   Library View

New columns are added (one for each configured Label Selector, plus one showing the Summary Marking value), as in the example below. The columns shown and their order is managed on a per library basis using the standard SharePoint features found under **Library Tools / Library / Library Settings / All documents**.
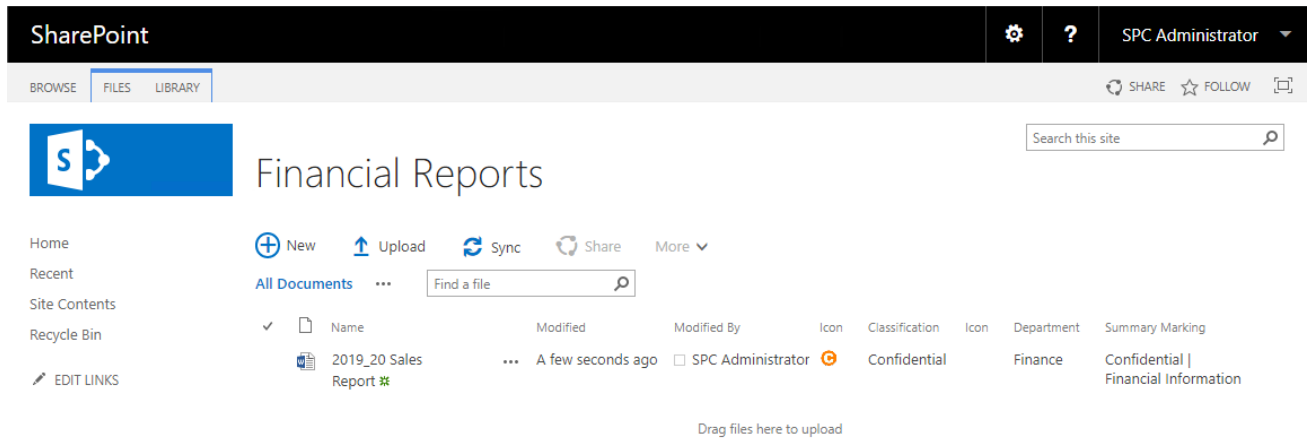
Figure 2: Library Columns

3.5   Uploading a File

When you upload a file into a SharePoint Classifier enabled library, SharePoint Classifier will check the file and one of the following conditions will apply:

- The file is a Classifier supported document and contains a label recognised by Classifier. In this case, the label is propagated into the SharePoint columns.
- This file is a Classifier supported document but does not include a label recognised by Classifier, or it is a Classifier unsupported document. In either case, the file is uploaded to SharePoint and the SharePoint columns show the item as unlabelled or a default classification can be applied.

The label value can be viewed and where appropriate modified as described in the next section.

3.6   Viewing and Changing Label Value after upload

Any file in SharePoint Classifier can have a label applied. However, the ability to change an existing label value can be controlled by **Check for label change** rules, details of which can be found in the Classifier Administration Guide, ref [1], under **Policies / Rules supported / Check Rules**.

- Select the file
- Choose the Classification Information option from the Document ribbon bar or Classification Information from the item context menu.
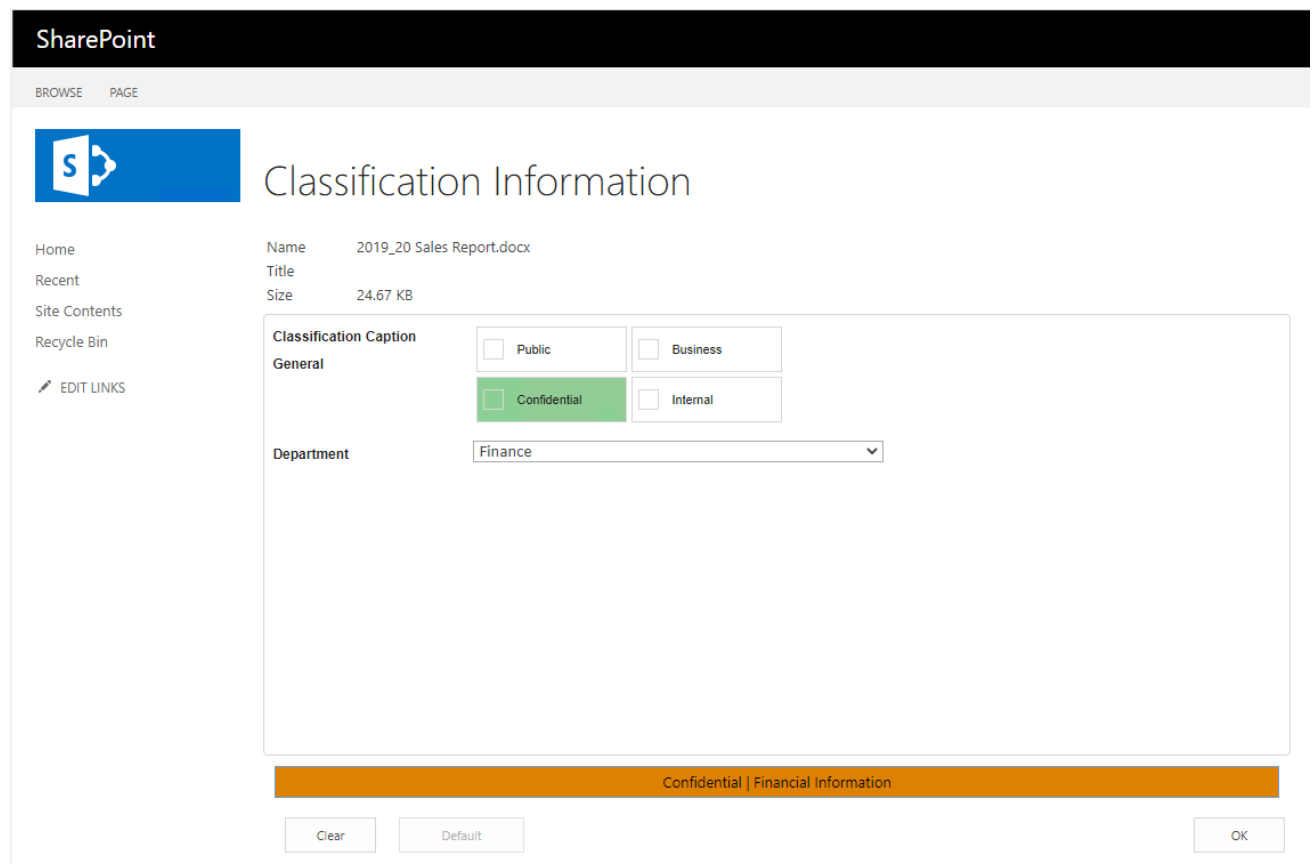
Figure 3: Edit Properties

Classifier will enforce any **Check these mandatory selectors** or **Check for label change** rules defined for SharePoint.

All unlabelled items within SharePoint may be labelled by this mechanism. However, items fall into three categories:

- Items that Office Classifier can label (Word, Excel, PowerPoint, Project, Visio). Labelling these items will update the Classifier label property of the item, but will not change the item in any other way (e.g. Markings will not be updated).
- Items that can be labelled by File Classifier or Power Classifier (e.g. ZIP, JPEG, PDF, HTML, Open Office Documents) – see **Appendix Label Propagation Mechanisms** in the Classifier Administration Guide, ref [1], for full details. Labelling these items will set the appropriate item property.
- All other items (e.g. TXT, Database). Labelling such items only sets the label as a SharePoint property. Such labels are never available outside SharePoint.

When Apply Clearance and Clearance Name are correctly configured then the SharePoint Classifier label dialog will be masked using this Classifier Clearance to stop users selecting an inappropriate classification for an item in the document library. This masking of the label dialog is only present when using the SharePoint Classifier label dialog. Any other Classifier applications used to classify an item in this document library will be not have masking applied using this Classifier Clearance.

When a classification is applied to an item using the Classify option in SharePoint then the Classifier columns on that item will show Update Pending until a SharePoint Classifier Configuration Item Service has successfully processed the changes. Upon completion, the columns will be updated to

show the correct values for the selected classification and the selected classification will be applied to natively classified file types.

3.7   Inappropriate Classification

Items with a classification that is inappropriate for the document library can be quarantined. When a user adds or updates an item with an inappropriate classification the item will be quarantined and the user will receive an email stating the item has been quarantined.

The user can then apply an appropriate classification to the item for that document library and restore the item from the quarantined state.

If the user cannot apply an appropriate classification to the item then the item must be deleted and cannot be restored from the quarantined state.

4   Interworking with Classifier applications

Note: Detailed information on the use and propagation of labels by Classifier applications can be found in the Classifier Administration Guide, ref [1], in Appendix – Label Propagation Mechanisms.

SharePoint Classifier uses the same Label information as Office Classifier and CAD Classifier (Classifier 'private' label property and Label Locations) when reading labels from file types supported (e.g. Microsoft Word, Excel, PowerPoint and Project but not VISIO).

Using SharePoint Classifier to apply a label value to an unlabelled Word document will update the Classifier 'private' label property. Consequential effects on Markings are applied the next time the document is opened using Office Classifier. In this circumstance, SharePoint Classifier will set a custom property indicating to Office Classifier that the current Markings may not match the label value. Office Classifier will then automatically update the Markings the next time the document is opened. This mechanism can be inhibited via a Classifier Administration option:

Label Configurations / Configuration Settings / Classifier Application Settings / SharePoint Classifier / Set property to refresh markings (default **Enabled**).

Note: Markings may be refreshed using the label applied by SharePoint Classifier if the document is printed or saved.
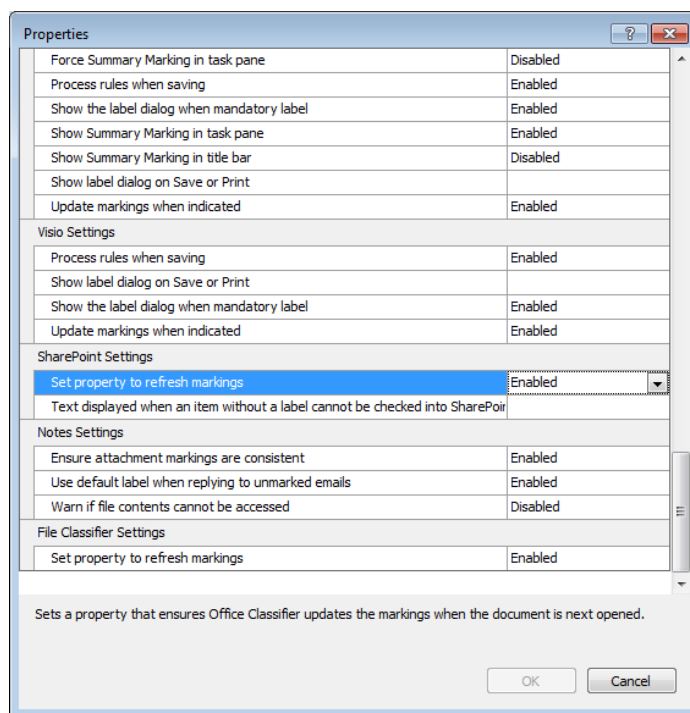

Figure 4: Set property to refresh markings

For Outlook, EML and MSG format messages, SharePoint Classifier uses the same Label location information stored within the message as is used by Email Classifier.

For PDF files, SharePoint Classifier uses the *BJ label* property (as supported by File Classifier and Power Classifier for Files), otherwise check configured locations (document label locations configured in the Classifier configuration) for a label value.

For ZIP files check the Comment field to see if it contains a *BJ label* (as supported by File Classifier and Power Classifier for Files).

For the following use the *BJ label* value if it exists, otherwise check configured locations (email label locations configured in the Classifier configuration) to determine the current label value:

- JPG, JPEG, JPE
- html, htm
- odf, odt, odp

Note: Support for these file types requires additional configuration of Classifier plug-ins under guidance from Classifier support. Be aware that the plug in for DXF/DWG files only supports reading of BJ Label values.

For all other file types (e.g. .TXT) SharePoint Classifier allows you to apply a label to the file within SharePoint. This label value is not propagated beyond SharePoint.

Note: Any Classifier label assigned to an RMS protected document, S/MIME protected document or MSG file will not be available when an upload takes place.