Content Manager

Software Version 10.0

Web Client Installation and Configuration



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Many areas of the portal require you to sign in with a Software Passport. If you need a Passport, you can create one when prompted to sign in. To learn about the different access levels the portal uses, see the Access Levels descriptions.

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Content Manager Web Client

Introduction

The purpose of the Content Manager Web client is to provide zero-footprint browser-based access to a Content Manager database.

Content Manager Web Client uses the responsive design paradigm. The responsive design feature allows Content Manager Web Client to automatically adjust and layout the content of the application to suite the specific device.

Audience

This document is for administrators who need to install and configure the Content Manager Web client.

IMPORTANT: For installation and upgrade information, please see CM10.0_Install.pdf.

System requirements

For operating system and browser requirements for Content Manager Web client, see CM10.0_ Spec.pdf.

Pre-requisites

Web Servers

The requirements for the Content Manager Web Client Server are the same as for a Content Manager Workgroup Server plus the additional requirements below.

See CM10.0_Spec.pdf for Content Manager specifications and limitations.

Additional requirements:

- Microsoft Internet Information Server (IIS) 7.5, 8.0 or 8.5 with Microsoft .Net Framework 4.5.
- The correct Roles Services for the respective Web Server under Windows Server 2012 need to be configured and installed.

Configuration

Setting up Single Sign On (SSO) authentication for the Web Client

The Content Manager Web Client can be setup to use Single Sign On (SSO) for authentication.

In this instance, SSO is used to refer to the task of identity federation, which is authenticating with a web application located outside your organisation boundary using your organisation credentials. This might be achieved in a variety of ways, such as, a WS-Fed solution like ADFS (or Azure AD) or one of the many public SAML providers (OneLogin, Ping Identity and Okta).

Once the Content Manager Service API has been installed, navigate to http://localhost/CMServiceAPI/help/authentication for an in-depth overview of how to integrate the Web Client with ADFS.

After integrating the Web Client with ADFS, the key **useADFS** needs to be changed to **true** in the file hprmServiceAPI.config.

<!-- Web Client configuration -->

```
<setup databaseId="45" searchAhead="true" workpath="C:\Micro Focus Content
Manager\ServiceAPIWorkpath\Uploads" useADFS="true" />
```

Configuring Document Viewer

The Content Manager Web Client provides generic document viewer to view different types of documents. If you want to view your document in the native application, you can bypass Content Manager document viewer for those file types. Depending on the browser you are using, the document will be opened in another tab or you will be prompted to save and download the file to your local system.

Internet Explorer and Firefox users need to install Adobe Acrobat Reader on their desktop in order to view the PDF version of the document when you click the document icon in the Web Client.

To bypass document viewer, navigate to **Settings > Document Viewer** tab and select the file type or extension from the drop-down for the **Bypass Content Manager Viewer for these File Types** option.

If the file type or extension you are looking for is not available in the drop-down, you need to add the required file type to the list of files in the **bypassViewerFileTypes** attribute in the **hprmServiceAPI.config** file located in Content Manager Web Client install folder (e.g, C:\Program Files\Micro Focus\Content Manager\Web Client).

For example,

```
<setup databaseId="45" searchAhead="false" workpath="C:\Micro Focus Content
Manager\ServiceAPIWorkpath\Uploads"
bypassViewerFileTypes
="*.JPEG;*.JPG;*.PNG;*.TXT;*.GIF;*.BMP;*.MPG;*.MPEG;*.XML;*.TIFF;*.TIF;*.PDF;*.CSV"
disableDownloadDocument="true"/>
```

Managing Content Manager Web Client Security

This section assumes you are familiar with the following technologies:

- Microsoft Internet Information Server (7+ and 8+)
- Content Manager Enterprise Studio

Background

For the Content Manager Web Client to work, it needs to be able to connect to the Content Manager Workgroup Server. The Content Manager Web Client can connect to the local Content Manager Workgroup Server or a remote Content Manager Workgroup Server. To connect, the Content Manager Web Client IIS account must be the same as the Content Manager Workgroup Server service account. Additional configuration will be required if the Content Manager Web Client IIS account is different to the Content Manager Workgroup Server Service account.

Why impersonation delegation?

In Windows, the Content Manager desktop client logs onto a Content Manager Workgroup Server using the user's Windows credentials. The Content Manager Web Client is essentially a Content Manager client that connects the Web Client user to the Content Manager Workgroup Server. The Web Client service account needs to log onto the Content Manager Workgroup, not as itself, but as the Web Client user account. This process is called impersonation.

Security would be compromised if any account were to be allowed to impersonate any other account. In Content Manager Enterprise Studio, configure a list of trusted server accounts. These trusted server accounts are allowed to impersonate other accounts. It is important that you keep this list of accounts as short as possible, and that the accounts listed in it are not compromised. When the Content Manager Web Client attempts to log onto the Content Manager Workgroup Server, the Content Manager Workgroup Server checks that the Web Client is running under a trusted server account.

The authentication settings allow the Web Client user to connect to a Content Manager Workgroup Server in a double hop environment, where the user logs on to the Content Manager Web Client using NTLM. The Windows NT Challenge/Response authentication does not support double-hop impersonations (in that once passed to the IIS server, the same credentials cannot be passed to a back-end server for authentication.

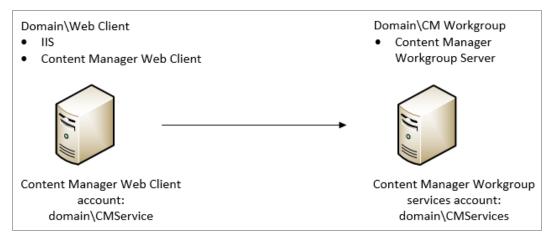
See also http://support.microsoft.com/kb/264921, section Windows NT Challenge / Response.

NOTE: The Content Manager Workgroup Server service account is automatically trusted. If the Web Client runs under the same account as the Content Manager Workgroup Server, it is not be necessary to configure it in Content Manager Enterprise Studio as a trusted server account.

Content Manager Web Client account is the same as Content Manager Workgroup Server account

In this instance, no additional configuration is needed. If your Content Manager Workgroup Server account is **domain\trimservices**, where **domain** is your organization's domain name and **trimservices** is the domain user name, the account that runs your Content Manager Web Client must also be **domain\trimservices**.

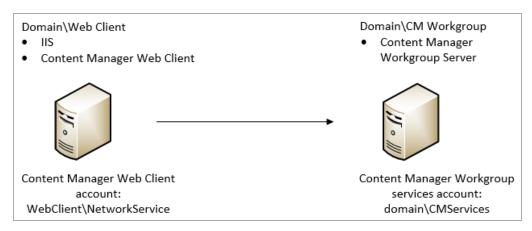
For example, in the deployment scenario below, you will not need to do any additional configuration because the Content Manager Web Client and the Content Manager Workgroup Server are both running as **TRIM****trimservices** account.



Content Manager Web Client account is different to Content Manager Workgroup Server account

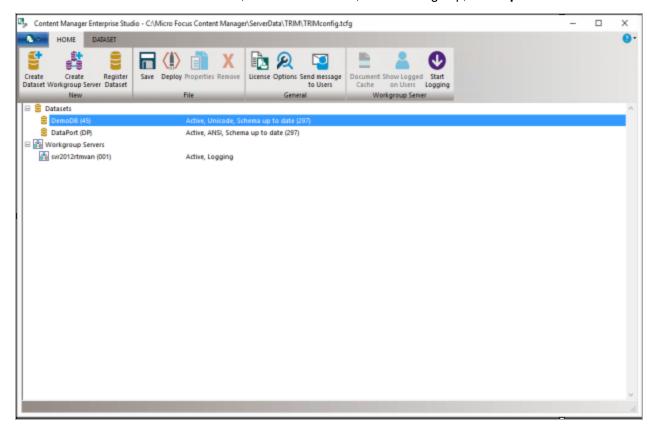
If the Content Manager Web Client IIS account is different to the Content Manager Workgroup Server service account, the Content Manager Web Client IIS account must be added to the list of authorized user accounts that the Content Manager Workgroup Server will trust with supplying valid user credentials.

For example, if the Content Manager Web Client instance runs as Network Services (**Web Client\Network Services**) and the Content Manager Workgroup Server runs as **TRIM\trimservices**, you will need to add **TRIM\Web Client\$** in the trusted user list in Content Manager Enterprise Studio. This is because Network Services will try to log on to Content Manager Workgroup Server as **TRIM\Web Client\$** (domainName\computerName\$).



Adding the authorized account that the Content Manager Workgroup Server will trust with supplying valid user credentials:

1. As an Administrator, open **Content Manager Enterprise Studio**, select the dataset name that is the authorized account is to be added to, from the **Home** tab, on **General** group, click **Options**.



2. On the displayed **Options** dialog, click **Other**.

Options	×
	Email Notifications Family Name Other
	When making a connection from a client to a workgroup:
	Suppress warning message if software versions do not match
	When accepting dates and times from client connections:
	Synchronize client clocks with those on the workgroup server
	Trusted server accounts that the Content Manager Workgroup Server will trust with supplying valid user credentials.
	Remove
	Enter user account name and press Add
	Add
	OK Cancel Help

3. In the field **Enter user account name type** the full account name (domain\user) for the Content Manager Web Client and then click **Add**.

domain\username\$	Remove

- 4. Click OK.
- 5. On the **Content Manager Enterprise Studio** dialog, from the **Home** tab, on the **File** group, click **Save** and then click **Deploy**.

By default, the Content Manager Web Client runs under the IIS application pool's identity which is Network Services. When the Content Manager Web Client runs as Network Services, IIS will try to log onto the Content Manager Workgroup Server as **domainName\computerName\$**, where domain name is your organization domain and **computerName\$** is your computer account. This domain account is created automatically when the computer is joined to the domain.

For the Network Services account to be able to log on to the Content Manager Workgroup Server, change the Content Manager Web Client identity from the Network Services account to the account that runs the Content Manager Workgroup Server. Otherwise, add the computer account of the computer that the Content Manager Web Client is running on (**domainName\computerName\$**) to the trusted account list in Content Manager Enterprise Studio.

By default, the Content Manager Web Client runs as Network Services and will try to connect to the Content Manager Workgroup Server as TRIM\WEB\$. You can change the Content Manager Web Client application identity by creating a new IIS application pool and set the new application pool identity to a domain service account. If this account is the same as the Content Manager Workgroup Server account, you will not have to add this account to the trusted list in Content Manager Enterprise Studio.

Example: running Content Manager Web Client as a domain account

For the Content Manager Web Client to connect to the Content Manager Workgroup Server as domain account, the following conditions must be met:

- Content Manager Web Client identity must be set by changing the application pool identity to the domain account that you want
- The domain account must be in the trusted account list in Content Manager Enterprise Studio You will need to change the application pool identity that the Content Manager Web Client is using. It is recommended to create a new application pool and set this pool identity to the domain user account. For information on how to do this, please consult Microsoft's guides on how to create an IIS application pool.
- IIS 7+ http://technet.microsoft.com/en-us/library/cc731784(WS.10).aspx

Prevent Download

If your organization as a requirement to disable the Download functionality of the Web Client so users cannot create local copies of the documents, this can be done by adding a new attribute to Web Client hprmServiceAPI.config

When this attribute is set to true:

- The **Download** option will not be available on the Preview panel
- The Generate URL Link option will not be available on the Preview panel, and
- Users will not be able to use the Check Out option from the record details component.

NOTE: The Check Out and Edit functionality is not affected by this attribute.

To disable the Download functionality:

- 1. On the machine where the Web Client is installed and configured, navigate to the installation directory, by default, this is C:\Program Files\Micro Focus\Content Manager\Web Client.
- 2. As an administrator, open hprmServiceAPI.config in a text editing application, e.g. Notepad ++
- 3. To the <setup> section, add disableDownloadDocument="true", e.g.

<setup databaseId="45" searchAhead="false" workpath="C:\Micro Focus Content
Manager\ServiceAPIWorkpath\Uploads"</pre>

bypassViewerFileTypes="*.JPEG;*.JPG;*.PNG;*.TXT;*.GIF;*.BMP;*.MPG;*.MPEG;*.XML;*.TI
FF;*.TIF;*.PDF;*.CSV" disableDownloadDocument="true"/>

4. Save the updated hprmServiceAPI.config

Web Client Mobile redirection

By default, if the Web Client is accessed on a mobile phone device, the Web Client will be displayed using the Mobile client view.

This redirection can be disabled by adding the **webToMobileRedirection** attribute and setting it to **false**, to the setup tag in the **hprmServiceAPI.config** file.

For example:

<!-- phoenix configuration -->

<setup databaseId="45" searchAhead="false" webToMobileRedirection="false"
advancedSearch="false" workpath="C:\Micro Focus Content
Manager\ServiceAPIWorkpath\Uploads"/>

This redirection can be re-enabled by changing the **webToMobileRedirection** attribute and setting it to **true**.

Allowing specific File Types to be uploaded

To allow the uploading of specific File Types to the Web Client, a white list can be added to the **hprmserviceapi.config** file. This list defines what file types can be uploaded to the Web Client, any file types not listed will fail if uploaded.

To create a white list for the Web Client, add the **fileUploadWhiteList** attribute with the accepted file extensions, separate each allowed extension with a comma, to the setup tag in the **hprmServiceAPI.config** file.

For example:

<!-- phoenix configuration -->

<setup databaseId="45" searchAhead="false" webToMobileRedirection="false"
advancedSearch="false" workpath="C:\Micro Focus Content
Manager\ServiceAPIWorkpath\Uploads" fileUploadWhiteList="xlsx,docx,pdf"/>

If the fileUploadWhiteList attribute is not defined, all file types will be accepted.

Allow file scanning before uploading

To allow file scanning before uploading to the Workgroup server or Document Store, you need to add a configuration attribute. By setting the value of this attribute, you can delay the WebClient record creation process. When you upload the file to the server or document store, a progress message is displayed that the file is being scanned.

To allow file scanning, add the **delayUploadedFileTransferTime** attribute to the setup tag in the **hprmServiceAPI.config** file.

For example,

```
<!--phoenix configuration-->
```

```
<setup databaseId="45" searchAhead="false" workpath="C:\Micro Focus Content
Manager\ServiceAPIWorkpath\Uploads"
bypassViewerFileTypes="*.JPEG;*.JPG;*.PNG;*.TXT;*.GIF;*.BMP;*.MPG;*.MPEG;*.XML;*.TI
FF;*.TIF;*.PDF;*.CSV" webToMobileRedirection="true"
delayUploadedFileTransferTime="5000" />
```

If the **delayUploadedFileTransferTime** attribute is set to 0 or not added in the <setup> tag means the feature is disabled. To enable this feature, set the value to any integer greater than or equal to 2 seconds.

Blocked Search Methods

If a Content Manager Administrator blocks a search method, it will not be visible in the Web Client advanced search editor. However, user can still perform a string search which sends the query to the Content Manager Web Service. By default, these blocked searches will not be blocked by the Content Manager Web Service and will still be executed from the Web Client string search.

In order to force the Web Service to block the blocked search methods from the string search, **preventBlockedSearchMethod** needs to be set to **true** in the Searching config element in **hprmServiceApi.config** under the Web Client install directory.

For example:

```
<hptrim>
...
<searching pageSize="30" searchRecursiveOption="_$_"
preventBlockedSearchMethod="true" />
```

••••

</hptrim>

If the **preventBlockedSearchMethod** attribute is not present, the default value is false which means blocked search method will still be executed from the string search field from the Web Client.

Prevent Link Injection

To prevent users from inserting malicious link in to the application, a new attribute can be added to the **hprmServiceAPI.config** file. Enabling this attribute prevents user from modifying the links when viewing the documents.

Add the attribute **disableKeyViewURL** and set the value to **true** in the **setup** tag of **hprmServiceAPI.config** file.

For example:

```
<setup databaseId="45" disableKeyViewURL="true" searchAhead="false"
webToMobileRedirection="false"
advancedSearch="false" workpath="C:\Micro Focus Content
Manager\ServiceAPIWorkpath\Uploads"
fileUploadWhiteList="xlsx,docx,pdf"/>
```

When you view the document, the link is now not clickable.

Prevent checking out to OneDrive

You can prevent users from checking out document(s) to OneDrive by adding **preventOneDriveCheckoutExtensions** attribute to the **hprmServiceAPI.config** file. With this attribute, provide a list of file extension(s) for which you want to prevent checking out to OneDrive.

With this option set in the **hprmServiceAPI.config** file, the OneDrive or Cloud icon is disabled in the Web Client for the file extension(s) specified in the list.

Add the attribute **preventOneDriveCheckoutExtensions** and provide a list of file extension(s) in the **hptrim** tag of **hprmServiceAPI.config** file.

For example:

```
<hptrim xmlns="http://HP.HPTRIM.CMIS/hptrimConfig.xsd"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" poolSize="1000" trace="true"
indexPagePath="/Home" notFoundErrorHandler="/APIErrorPages/NotFound"
globalErrorHandler="/APIErrorPages/GlobalErrors" uploadBasePath="C:\Micro Focus
Content Manager\ServiceAPIWorkpath\Uploads" autoPoolClean="true"
serviceFeatures="Html,Json,Razor,Xml,PredefinedRoutes"
preventOneDriveCheckoutExtensions="doc,xls,txt"
xsi:noNamespaceSchemaLocation="hptrimConfig.xsd">
```

Setting a custom logo

You can now customise the logo in Web Client by changing the image file. To set the custom logo in Web Client, follow these steps:

- 1. Launch the Web Client. The Micro Focus Content Manager logo is displayed on the top left corner of the Web Client.
- 2. Navigate to the following location: C:\Program Files\Micro Focus\Content Manager\Web Client\Content\img\.
- 3. Replace the cm_68_68.png image file with the desired logo.

NOTE: Make sure that the file name of the new image is same as the old one, i.e., **cm_68_68.png**.

4. Refresh the Web Client system.

The new logo is displayed on the top left corner of the Web Client.

Enable System Monitor event processor for view counter

The view counter depends on the System Monitor event processor and hence this needs to be enabled in the Content Manager Enterprise Studio for the dataset.

To enable the System Monitor event processor, perform the following steps:

- 1. Right-click on the dataset for which you want to enable System Monitor event processor.
- 2. Navigate to Event Processor > Configure.

The Configure Event Processing for Dataset dialog is displayed.

- 3. In the Configure Processes tab, select **Enabled** from the drop down of **Configuration status** for **System Monitor**.
- 4. Select the workgroup server on which the System Monitor should be enabled and click **OK**.
- 5. In the Content Manager Enterprise Studio, **Save** and **Deploy** the dataset to the workgroup server.

Troubleshooting

Authentication Prompts

Issue

Content Manager Web Client prompts users for authentication although their credentials are valid.

Solution

In Web.config, set clientCredentialType to Windows if it is set to NTLM:

<transport clientCredentialType="Windows" />

Windows Integrated Authentication and Internet Explorer

Internet Explorer prompts for a password when you are using Windows integrated authentication, also known as Microsoft Windows NT challenge/response or NTCR.

The following conditions must be met for Internet Explorer to automatically authenticate a user's logon and password and maintain security:

- NTCR must be enabled in the Web site properties in IIS. Anonymous authentication is attempted first, followed by NTCR, digest authentication (if applicable), and finally basic (clear text) authentication.
- Both the client and the Web Server must be either in the same Microsoft Windows NT-based or Windows 2000-based domain or in trusted Windows NT-based or Windows 2000-based domains in which the user's account can be granted permissions to resources on the IIS-based computer
- The user's browser must be Internet Explorer. Internet Explorer is the only browser that supports
 NTCR
- Internet Explorer must consider the requested URL to be on the intranet (local). If the computer
 name portion of the requested URL contains periods (such as http://www.microsoft.com and
 http://10.0.0.1), Internet Explorer assumes that the requested address exists on the Internet and
 does not pass any credentials automatically. Addresses without periods (such as http://webserver)
 are considered to be on the intranet (local); Internet Explorer passes credentials automatically. The
 only exception is addresses included in the Intranet zone in Internet Explorer.
- Internet Explorer's Intranet zone security setting must be set to Automatic logon only in Intranet zone. This is the default setting for Internet Explorer. For additional information about Internet Explorer security zones, click the article number below to view the article in the Microsoft Knowledge Base:

Source: See http://support.microsoft.com/kb/258063

A Note to Administrators Regarding Systems Options

When the system options are changed using the Content Manager client, the IIS application pool associated with the Content Manager Web Client virtual directory or the Web site needs to be recycled.

This will not affect other Web sites or virtual directories on the IIS server. The assumption is that the implementation of the Content Manager Web Client needs to have its own application pool.

- 1. Open Internet Information Services (IIS) Manager.
- 2. Expand the Server Name, click on Application Pools.
- 3. Right-click on ContentManagerAppPool, click Recycle from the Application Pool Tasks.

Installer Behavior When Installing to Invalid Web Site

When installing Content Manager Web Client to an invalid Web site, e.g. one that uses port 80 and no host name, the installer installs Content Manager Web Client to the default Web site instead.

If the Web site that the installer used is incorrect, you can use IIS to move the installation. See Moving the installation to another Web site below

Moving the installation to another Web site

- 1. In IIS, right-click the Web site you want the Web Client to work under and using **Add Application**, point it to the **Web Client directory**.
- 2. Complete the required details on the Add Application dialog and then click OK.
- 3. Change the port or add the host name under Bindings.
- To avoid confusion, under Default Web Site, remove Content Manager Web Client by rightclicking it and clicking Remove.

Editing hprmServiceAPI.config

The file **hprmServiceAPI.config** in the installation folder has the following section, which the installation sets automatically:

<?xml version="1.0" encoding="utf-8" ?>

<hptrim>

<setup databaseId="45" useBrowserPDFViewer="false"</pre>

searchAhead="true" workpath="C:\Micro Focus Content
Manager\ServiceAPIWorkpath\Uploads" useADFS="false" />

</hptrim>

When the settings are not correct, you should correct them manually.

The parameters refer to:

- DatabaseId database id
- **useBrowserPDFViewer** the value indicates whether the PDF document is viewed in its native format using a PDF Viewer or HTML
- SearchAhead the value indicates whether the automatic type ahead when searching is turned on or off
- **Workpath** the path where the Content Manager Web Client stores temporary user uploaded files before the database stores these temporary files
- **useADFS** the value indicates whether Single Sign On authentication for the Content Manager Web Client is on or off

Cross-site Request Forgery

Background

"A common type of attack on websites is referred to as cross-site request forgery (often abbreviated as CSFR or XSFR). When users visit a malicious website or open a malicious email message or instant message, code can attach to their browser and can secretly submit harmful requests on a site where the users are authenticated. In effect, the malicious site forges ("spoofs") requests so that they appear to come from a legitimate user."

From https://msdn.microsoft.com/en-us/library/system.web.helpers.antiforgery(v=vs.111).aspx

In 9.0, the Content Manager Web Client introduced an Anti-forgery mechanism to protect users from such attack. This Anti-forgery mechanism is turned off by default. This can be turned on by adding the **requireAntiForgeryToken="true"** within the <hptrim> element in **hprmServiceAPI.config** in Web Client installation directory, by default, this is C:\Program Files\Micro Focus\Content Manager\Web Client

For example:

```
<hptrim requireAntiForgeryToken="true" poolSize="1000" indexPagePath="/Home"
notFoundErrorHandler="/APIErrorPages/NotFound"
globalErrorHandler="/APIErrorPages/GlobalErrors" uploadBasePath="C:\Micro Focus
Content Manager\ServiceAPIWorkpath\Uploads" autoPoolClean="true"
serviceFeatures="Html,Json,Razor,Xml"
xmlns="http://HP.HPTRIM.CMIS/hptrimConfig.xsd"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="hptrimConfig.xsd">
```

The effect of this is, when user logs in, the Content Manager Web Client will generate an anti-forgery token to be included for all HTTP POST to the server for the current user. POST request will be rejected if it does not include the anti-forgery token.

This applies to all POST request such as : create, update record, file upload.

Error navigating to the Content Manager Web Client

Issue

Error received when attempting to navigate to the Content Manager Web Client after installation: Server Error in '/WebClient' Application.

Could not load type 'System.ServiceModel.Activation.HttpModule' from assembly 'System.ServiceModel, Version=3.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089'.
Description: An unhandled exception occurred during the execution of the current web request. Please review the stack trace for more information about the error and where t originated in the code.
Exception Details: System.TypeLoadException: Could not load type 'System ServiceModel Activation'HttpModule' from assembly 'System ServiceModel, Version=3.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089'.
Source Error:
An unhandled exception was generated during the execution of the current web request. Information regarding the origin and location of the exception can be identified using the exception students.

Summary

The error message may appear when trying to navigate to the Content Manager for the first time.

You may encounter this error message when either an earlier version of the .NET Framework has been installed or .NET 3.0 WCF HTTP Activation is enabled after .NET Framework 4.0/4.5 has been installed.

Solution

Run the following command line:

Aspnet_regiis.exe. /iru

The Aspnet_regiis.exe file can be found in one of the following locations:

- %windir%\Microsoft.NET\Framework\v4.0.30319
- %windir%\Microsoft.NET\Framework64\v4.0.30319 (on a 64-bit computer)

Source: See http://support.microsoft.com/kb/2015129

Getting 401 unauthorized when using FQDN or custom host header

Issue

When navigating to the Content Manager Web Client using either the fully qualified domain name (FQDN) or a custom host header, *HTTP 401.1 – Unauthorized: Login Failed* message is displayed.

Summary

The error message is displayed even when the user enters correct credentials when prompted. This occurs when the CM Web Client uses Integrated Windows Authentication and has a name that is mapped to the local loopback address.

Changing the Date Format when using the (.) separator

Issue

If a user changes the Date Separator from either a forward slash (/) or a dash (-) to a period, and then changes the Date Format setting to either dd/mm/yyyy or mm/dd/yyyy, date searches might not return correct results.

Solution

Wait for the application pool to recycle automatically in due time or manually recycle the application pool.

Appendix A Configuring WebDav

In Content Manager 9.0, a new **Check Out and Edit** option was introduced as an addition to the existing Check Out and Check In options that check the document out to a local directory and requires the user to browse to that location to check the document in after it has been modified. This new option allows users, accessing the Content Manager Web Client via a supported version of Internet Explorer, to check out an electronic document and edit it directly in its authoring application.

This new option utilizes a workpath directory on the Web Client Web Server. When a user checks out a document using this new option, the document is saved as a working copy in a sub-directory on the Web Client Web Server. The user can make edits and save the document, and at their convenience, using the Content Manager Web Client, they can check the document back into the Content Manager database.

This appendix covers the configuration of the Server, Internet Information Services Manager (IIS) and Web Server directory to enable the new WebDAV **Check Out and Edit** option.

NOTE: this feature does not work when using ADFS for Web Client Authentication. If you are using ADFS Authentication **do not** complete the following WebDAV configuration steps in your environment.

Configuring and Installing WebDav Publishing

NOTE: these instructions are for a Web Server that is already configured for the Content Manager Web Client. If you are a new site, please following the installation and configuration instructions found in Installation and Configuration

To enable the new Check Out and Edit option, the Web Server needs to have the WebDav Publishing role installed.

- 1. Open the Server Manager.
- 2. On the Server Manager Dashboard, click Add roles and features.

rea la companya de la		Server Manager		- LI ×
Server M	lanager 🕨 Dashboard		• 🥄 🚩 Manage	Tools View Help
Dashboard	WELCOME TO SERVER MANAGER			<u>^</u>
 Local Server All Servers File and Storage Services ▷ 	1 Conf	gure this local server		
	QUICK START	d roles and features		_
		d other servers to manage		_
	WHAT'S NEW 4 Cre	eate a server group		_
	LEARN MORE			Hide
	ROLES AND SERVER GROUPS			
	Roles: 1 Server groups: 1 Servers total	.1		
	File and Storage 1 Services	Local Server	1 All Servers	1
	Manageability	 Manageability 	Manageability	
	Events	Events	Events	
	Performance	Services	Services	
	BPA results	Performance BPA results	Performance BPA results	
		DEATESUIS	DEATESUIS	~

3. Click Next on the Add Roles and Features Wizard.

*	Add Roles and Features Wizard – 🗆 🗙				
Before you begin	DESTINATION SERVER Svr2012RTMVan.trim.lab This wizard helps you install roles, role services, or features. You determine which roles, role services, or				
Before You Begin Installation Type Server Selection	features to install based on the computing needs of your organization, such as sharing documents, or hosting a website.				
Server Roles Features Confirmation Results	Start the Remove Roles and Features Wizard Before you continue, verify that the following tasks have been completed: • The Administrator account has a strong password • Network optimes much as their 10 orderes are optimized.				
	 Network settings, such as static IP addresses, are configured The most current security updates from Windows Update are installed If you must verify that any of the preceding prerequisites have been completed, close the wizard, complete the steps, and then run the wizard again. 				
	To continue, click Next.				
	Skip this page by default				
	< Previous Next > Install Cancel				

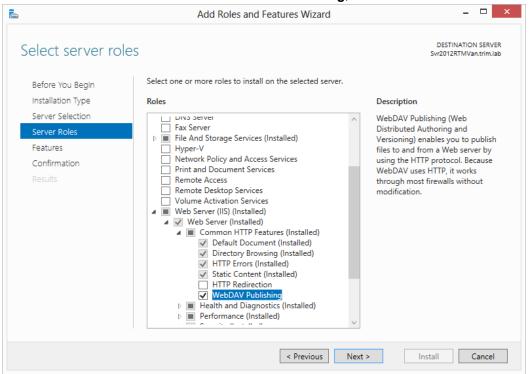
4. Select Role-based or feature-based installation and then click Next.

	Add Roles and Features Wizard -
Select installatio	on type Destination server Svr2012rTMVan.trim.lab
Before You Begin	Select the installation type. You can install roles and features on a running physical computer or virtual machine, or on an offline virtual hard disk (VHD).
Installation Type Server Selection	Role-based or feature-based installation
Server Selection	Configure a single server by adding roles, role services, and features.
	O Remote Desktop Services installation
Features	Install required role services for Virtual Desktop Infrastructure (VDI) to create a virtual machine-based
	or session-based desktop deployment.
	< Previous Next > Install Cancel

5. Select the Server that the Roles and Features are to be installed on, and then click Next.

	Add Roles and Features Wizard – 🗆 🗙
Select destinati	ON SETVER Svr2012RTMVan.trim.lab
Before You Begin Installation Type Server Selection	 Select a server or a virtual hard disk on which to install roles and features. Select a server from the server pool Select a virtual hard disk
Server Roles Features Confirmation	Server Pool
	Name IP Address Operating System Sar2012X18/Sar35in.Lds IV:1702129 Microsoft Windows Server 2012 Standard
	1 Computer(s) found This page shows servers that are running Windows Server 2012, and that have been added by using the Add Servers command in Server Manager. Offline servers and newly-added servers from which data collection is still incomplete are not shown.
	< Previous Next > Install Cancel

6. From the displayed Roles list, expand **Web Server (IIS)**, navigate to **Web Server > Common HTTP Features** and select **WebDav Publishing**, and then click **Next**.



- 7. Click **Next** on the **Select features** dialog. The **Confirmation installation selections** dialog will be displayed.
- 8. Click **Install**. Once the installation is complete, click **Close**.

Enabling and Configuring WebDAV in Internet Information Services (IIS)

Enabling and Configuring the WebDAV Settings for IIS

- 1. Open Internet Information Services (IIS) Manager.
- 2. Under the defined Web Server name, expand the **Site** node and select the site where the Web Client is installed, e.g. **Default Web Site**.

e)	Internet Information Services (IIS) Manager – 🗖 🗙				
€ → SVR2012RTMVAN →		🗰 🖂 🙆 🖡			
File View Help					
Connections Conne	SVR2012RTMVAN Home Filter:	Actions Open Feature Manage Server Restart Stop View Application Pools View Stes Change .NET Framework Version Get New Web Platform Components			
	IS Image: Configurat Image: Configurat	Help Online Help			
leady	S Features View R Content View				

3. From the **IIS** group, select and open **WebDAV Authoring Rules**.

4. On the WebDAV Authoring Rules dialog, click Enable WebDAV.

V]		Internet Informa	ation Services (IIS)	Manager		- 🗆 🗙
€	Default Web Site →					📅 🖂 🔂 i 🚱 •
File View Help						
File View Help Connections •••••••••••••••••••••••••••••••	-	DAV Authoring o specify rules for author Users		content. Access	Entry Type	Alerts The WebDAV feature has been disabled. Actions Add Authoring Rule Enable WebDAV WebDAV Settings Help Online Help
	<	Content View			,	
Configuration: 'applicationHost.config'						1 .:

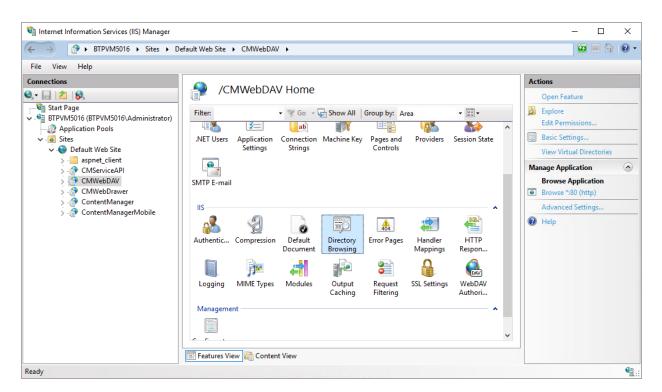
5. On the WebDAV Authoring Rules dialog, click WebDav Settings.

- 6. On the **WebDAV Settings** dialog, set the **Lock Behavior** options as follows, and the click **Apply**: **Allow Locks** True
 - Lock Store webdav_simple_lock
 - Require Lock for Writing False

N	Internet Information	on Services (IIS) Manager	×
(→ SVR2012RTMVAN → Sites	> Default Web Site >		🖬 🔤 🦓 🔞 -
File View Help Connections Con	WebDAV Settings Authoring Behavior Allow Unknown MIME Types Default MIME Type Lock Behavior Allow Locks Lock Store Require Lock for Writing	True application/octet-stream True webdav_simple_lock False	Actions Apply Cancel WebDAV Authoring Rules Help Online Help
	Property Behavior Allow Anonymous Property Queries Allow Custom Property Queries Allow Property Queries with Infinite Depth Property Store Request Filtering Behavior Allow File Extension Filtering Allow Hidden Segment Filtering Allow Verb Filtering WebDAV Behavior Allow Hidden Files to be Listed Compatibility Options Require SSL Access	False	
< > Configuration: 'applicationHost.config'	Lock Behavior		

Enabling and Configuring Directory Browsing for CMWebDav

- 1. Once the WebDAV settings have been applied, on the **Connections** panel, expand the **Sites** node, then expand the site node where the Web Client is installed, e.g. **Default Web Site** and select the **CMWebDAV** site.
- 2. From the **IIS** group, select and open **Directory Browsing**.

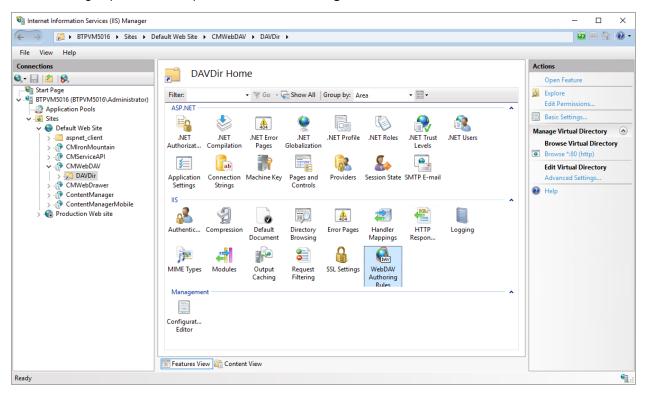


3. On the Directory Browsing dialog, click Enable.

💐 Internet Information Services (IIS) Manager		– 🗆 X
← → BTPVM5016 → Sites → Dependence	efault Web Site 🔸 CMWebDAV 🔸	🖸 🐼 🟠 🔞 •
File View Help		
Connections	Directory Browsing Use this feature to specify the information that displays in a directory listing. Ima Size Extension Date Long date	Alerts Image: Constraint of the system of
Configuration: 'Default Web Site/CMWebDAV' web	o.config	• <u>1</u> :

Adding WebDAV Authoring Rules for CMWebDAV

- Once Directory Browsing has been enabled, on the Connections panel, expand the Sites node, then expand the site where the Web Client is installed, e.g. Default Web Site > CMWebDAV nodes and select DAVDir.
- 2. From the IIS group, select and open WebDAV Authoring Rules.



- 3. On the **WebDAV Authoring Rules** dialog, click **Add Authoring Rule**. The **Add Authoring Rule** dialog will appear.
- 4. Create a new rule with the following options selected:
 - Allow access to All content
 - Allow access to this content to All users

Add Au	thoring Rule	?
Allow access to:		
Allow access to:		
All content		
Specified content:		
Example: *.bas, wsvc.axd		
Allow access to this content to:		
All users		
Specified roles or user groups:		
Admin, Guest		
Specified users:		
User1, User2		
Permissions		
✓ Read		
✓ Source		
✔ Write		
	ОК	Cancel

alaat D -d C

5. Click OK.

Configuring the CMWebDAV Workpath Folder

On the Web Server, in the Content Manager Web Client workpath folder, the CMWebDAV folder, the Windows File Sharing settings must be updated so all users of the Web Client have Change and Read permissions to this directory. Each document a user checks out and edits using the Check Out and edit option in the Web Client, will be saved as a working copy to a sub-directory beneath this directory. Each sub-directory and working copy files are restricted to the Content Manager user who checked them out.

- 1. On the Content Manager Web Client Web Server, using Windows Explorer, navigate to and open the WebClientWorkPath folder, by default this will be installed to C:\Micro Focus Content Manager\WebClientWorkpath.
- 2. On CMWebDAV folder, right-click and click Properties.

Alternatively, in IIS, on the Connections panel, expand the Sites node, then expand the site node where the Web Client is installed, e.g. Default Web Site and select the CMWebDAV site, then click Edit Permissions from the Actions panel.

The CMWebDAV Properties dialog will appear.

1. On the **Sharing** tab, click **Advanced Sharing**.

📜 CMWeb[OAV Properties	;	×
General Sh	aring Security	Previous Versions	Customize
1	CMWebD/	W	
Type:	File folder		
Location:	C:\Micro Fo	C:\Micro Focus Content Manager\WebClientWorkpa	
Size:	0 bytes		
Size on disk	:: 0 bytes	0 bytes	
Contains:	0 Files, 1 Fo	0 Files, 1 Folders	
Created:	Yesterday,	Yesterday, June 20, 2018, 11:01:10 AM	
Attributes:	Read-only (Only applies to files in folder)		
	Hidden		Advanced
		OK Cance	Apply

2. On the Advanced Sharing dialog, select Share this folder and then click Permissions.

CMWebDAV Properties	\times
Advanced Sharing	×
Share this folder Settings Share name: CMWebDAV Add Remove Limit the number of simultaneous users to: 16777. Comments:	
Permissions Caching	
OK Cancel Apply	
OK Cancel Apply	

- 3. On the **Permissions for CMWebDav** dialog, from the list of **Group or user names**, select **Everyone**.
- 4. From the displayed list of **Permissions for Everyone**, select **Change**, and if not already selected, **Read**.

Permissions for CMWebDAV		×
Share Permissions		
Group or user names:		
Sector Everyone		
	Add	Remove
Permissions for Everyone	Allow	Deny
Full Control		
Change Read		
Read	\checkmark	
ОК	Cancel	Analy
UK	Cancel	Apply

5. Click **Apply** and then click **OK** until you're back to the **CMWebDAV Properties** dialog, then click **Close** to save the new Sharing permissions.

Configuring hprmServiceAPI.config

When installed the **hprmServiceAPI.config** file will contain the relevant section enabling it to load the WebDAV plugin. This section looks like:

```
<pluginAssemblies>
<add name="TRIMWebClientWebDAV"/>
```

</pluginAssemblies>

NOTE: If you have upgraded from an earlier version of Records Manager you will need to navigate to the installation directory for the Web Client, by default, for a new installation, this is installed to C:\Program Files\Micro Focus\Content Manager\Web Client and open the **hprmServiceAPI.config** file and edit the <add name> property to uncomment <add name="HP.HPTRIM.WebClient.WebDAV"/> before saving the changes. If you have made any customizations to the **hprmServiceAPI.config** file you will need to manually copy the customizations from the **hprmServiceAPI.config** file that is copied to the WebClientWorkpath directory and paste them into the installed **hprmServiceAPI.config**

Note: If you've enabled the WebDAV module in hprmServiceAPI.config and the Check out and Edit option is not available in the Web Client, check the logs for errors stating why WebDAV can't be enabled. By default, the error log files are found C:\Micro Focus Content Manager\ServiceAPIWorkpath\logs

Client Configuration

When a user checks out and edits a document from Content Manager Web Client using the WebDAV check out and edit option, a warning message will appear:

	Open Document ×	
?	Some files can harm your computer. If the file information below looks suspicious, or you do not fully trust the source, do not open the file. File Name: 310 - 20REQU1.DOC From: localhost	
	OK Cancel	

This message can be suppressed for MS Office documents, but cannot be stopped for non-Office files, for example text files.

NOTE: If the Content Manager Web Client has been set up on an IIS site that uses a port different than the standard Port 80, then users may need to dismiss this warning twice when editing non office files.

To suppress this warning message:

- 1. On the Client machine, open the Internet Options control panel.
- 2. On the **Security** tab, select **Trusted sites** from the list of zones to view or change security settings and then click **Sites**.
- 3. On the displayed **Trusted sites** dialog, type in the IP address or host name of the Content Manager Web Server to the **Add this website to the zone** field, and then click **Add**.
- 4. Click Close to add the site to the Trusted sites for the client machine.

If you choose to add the Content Manager Web Client to the Trusted sites, you must also ensure that the User Authentication settings for the Trusted sites zone is set to **Automatic Logon with current user name and password**.

To set this authentication:

- 1. On the Client machine, open the Internet Options control panel.
- 2. On the **Security** tab, select **Trusted sites** from the list of zones to view or change security settings and then click **Custom level**.
- 3. On the displayed **Security Settings Trusted Sites Zone** dialog, scroll through the list of Settings to the **User Authentication** options and select **Automatic logon with current user name and password**.
- 4. Click **OK** to save these changes.

NOTE: Due to this authentication requirement, the WebDAV Check out and edit option does not support Guest account access to the Content Manager Web Client. All users must have a valid Windows Domain account that can automatically authenticate to the Web Server.

WebDAV with Load Balancing

Organizations who want to use the WebDAV **Check Out and edit** option in an environment that uses Load Balanced servers will need to modify their WebClient configuration to enable this to work.

If you need multiple server instances, then each instance needs to store and access working copies in the same WebDAV share, and direct the Web browser clients to that share.

The easiest way to do this is to designate one of the instances to store all the working copies. In Content Manager 9.2 or later this can be done by placing the real name of the designated instance into the Application Settings key named 'WebDAVHost'.

You can also use a WebDAV share on an independent host that isn't part of load balancing, but you will need to create the WebDAV share with exactly the same name, path, protocol & port bindings and settings as would be used by the WebDAV share on a stand alone Content Manager Web server setup.

To configure the Content Manager Web Client to use WebDAV with Load Balancing:

- 1. As an administrator, open the Web Client **web.config** file using a text editor, by default this is installed to C:\Program Files\Micro Focus\Content Manager\Web Client.
- In the <appSettings> section, modify the <add key="webDAVHost" value=""/> so the value string contains the name of the server that holds the WebDAV share to be used by all of the Load Balanced Content Manager Web servers, e.g.

```
<appSettings>
<add key="webpages:Version" value="2.0.0.0"/>
<add key="webpages:Enabled" value="false"/>
<add key="PreserveLoginUrl" value="true"/>
<add key="ClientValidationEnabled" value="true"/>
<add key="UnobtrusiveJavaScriptEnabled" value="true"/>
<add key="webDAVHost" value="CMweb1.loadbalance.com"/>
</appSettings>
```

IMPORTANT: Replace the "webDAVHost" value in the highlighted example with your own value.

3. Save and close the **web.config** file.

Appendix B Adding Custom Record Add-ins

Introduced in Records Manager Web Client 8.3, is an option for developers and business partners to add custom code via the record add-in infrastructure. This custom functionality is exposed under the **More** drop-down option on a Record object.

RECORDS	Query: 'creator:Me' Showing 1 - 8 of 8		
+ NEW	CLAUSE-6 III	\sim	
Checked out Recent Documents			
Favorites	LOCATIONS V REQUEST V DETAILS V NAVIGATE TO V WORKFLOW V ADD/REMOVE V		
Created Records Browse via Classification Browse via User Label	Make Final Make Inactive Inday, August 9, 2004 at 11:08 AM Make Inactive		
and show url	Show Report DOC DOC Show Report Active Audit Events	<	
	Security/Access Security/Access Google this record DOT Agreement for Anchorage Points	<	
	CLAUSE-1	<	

To expose the custom record add-in:

- 1. In the installation directory for the Web Client, by default this is C:\Program Files\Micro Focus\Content Manager\Web Client, create a folder called **CustomScripts**.
- 2. Copy the custom code JS file to the **CustomScripts** folder.
- 3. Open Content Manager Web Client, open a Record and then click **More**. Your new Record Add-in option will be available from the available options.

Example Simple Record Add-in

The following example shows how to create a custom record add-in that will, when a user clicks on the option, perform a Google search with the selected record's title.

```
//Wrap your code in a function to avoid conflict
var RMGoogleButtonAddon = function(){
var buttonCaption = "Google this record";
//1 - Create a new instance of a RecordAddonButton
var googleSearchButton = new HP.HPTRIM.Addon.RecordAddonButton ({
caption : buttonCaption,
clickHandler : function(){
console.log(this.context);
window.open("http://google.com/search?q=" + this.context.RecordTitle.Value)
}
});
//Optional - Perform custom checking before the button is rendered
googleSearchButton.preRender = function(){
var record = this.context;
if(record.RecordTitle.Value == "Microsoft") {
this.setVisible(false);
}
};
//2 - Register the addon button with CustomScriptManager
HP.HPTRIM.Addon.CustomScriptManager.register(googleSearchButton);
}();
```

RecordContext Properties

The clickHandler parameter in the HP.HPTRIM.Addon.RecordAddonButton constructor will be executed when the button is clicked. In this function, you will have access to the current context which is the current record. The properties of the current record object are:

```
export interface RecordContext {
```

- TrimType: string;
- RecordAssignee :Object;
- RecordAuthor :Object;
- RecordCheckedOutTo::Object;
- RecordContainer :Object;
- RecordDateAssigned :Object;
- RecordDateCreated :Object;
- RecordDateRegistered :Object;
- RecordDocumentStatus :Object;
- RecordDocumentType :Object;
- RecordExtension : Object;
- RecordHomeLocation :Object;
- RecordIsContainer : Object;
- RecordIsElectronic :Object;
- RecordLastPartRecord :Object;
- RecordNumber :Object;
- RecordOwnerLocation :Object;
- RecordRecordType :Object;
- RecordSpURL :Object;
- RecordTitle :Object;
- > IsInFavorites: boolean;
- EnabledCommandIds: Array<string>;
- Uri: number;
- }

HP.HPTRIM.Addon.RecordAddonButton Methods/Properties

RecordAddonButton supports the following methods and properties:

- **preRender**: this method can be assigned to your custom code when you want to perform any custom logic before the button is rendered
- setVisible: this method takes in a Boolean value which will set the visibility of the button.
- **caption**: this property represents the caption of the button.

Deployment

Once the code is written, it will need to be deployed into the{WebClientInstallDir}/CustomScripts folder where WebClientInstallDir is the Content Manager Web Client Installation directory. The CustomScripts folder is not created as a part of the installation process, you will need to manually create the folder before deploying your code.

Record Context Property types

The record context properties are on of a number of different object types, the types of these objects are:

Property	Туре
RecordAssignee	Location
RecordAuthor	Location
RecordCheckedOutTo	Location
RecordContainer	Record
RecordDateAssigned	Date
RecordDateCreated	Date
RecordDateRegistered	Date
RecordDocumentStatus	String
RecordDocumentType	String
RecordExtension	String
RecordHomeLocation	Location
RecordIsCheckedOut	Boolean
RecordIsContainer	Boolean
RecordIsElectronic	Boolean
RecordLastPartRecord	Record
RecordNumber	String
RecordOwnerLocation	Location
RecordRecordType	Record Type
RecordRequests	String
RecordSpURL	String
RecordTitle	String
IsInFavorites	Primitive Boolean
EnabledCommandIds	Array of primitive string
Icon	Icon
Uri	Primitive number

Example Object Types

Example object types

The following objects are JSON examples of the types found in the Record context.

Location { "TrimType": "Location", "LocationFormattedName": { "Value": "Full name of Location" }, "Uri": 900000000, "StringValue": "Short name of location" }

Record

```
{
"TrimType": "Record",
"RecordExtension": {
"Value": "PDF"
},
"RecordIsElectronic": {
"Value": true
},
"RecordNumber": {
"Value": "REC_411"
},
"RecordTitle": {
"Value": "My Record Title"
},
"Uri": 9000000378,
"StringValue": "REC_411",
"Icon": {
"IsFileTypeIcon": true,
"IsInternalIcon": false,
"IsValid": true,
"FileType": "PDF",
"Id": "Unknown"
}
}
```

Date

```
{
"IsClear": false,
"IsTimeClear": false,
"DateTime": "2015-11-08T21:48:12.0000000Z",
"StringValue": "9/11/2015 8:48 AM"
}
```

String

```
{
"Value": "A string",
"StringValue": "A string"
}
```

Boolean

```
{
"Value": false,
"StringValue": "Checked In"
}
```

Record Type

```
{
"TrimType": "RecordType",
"RecordTypeAllowParts": {
"Value": true
},
"RecordTypeAllowReplace": {
"Value": true
},
"RecordTypeAllowVersions": {
"Value": true
},
"RecordTypeLevel": {
"Value": 2
},
"RecordTypeMoveWhenReadOnly": {
"Value": false
},
"RecordTypeName": {
"Value": "Document"
},
"RecordTypeStoreType": {
"Value": "UseStore",
"StringValue": "Use A document store"
},
"RecordTypeTitlingMethod": {
"Value": "FreeText",
"StringValue": "Free Text"
},
"RecordTypeUsualBehaviour": {
"Value": "Document",
"StringValue": "Document"
```

```
},
"Uri": 2,
"StringValue": "Document",
"Icon": {
"IsFileTypeIcon": false,
"IsInternalIcon": true,
"IsValid": true,
"FileType": "",
"Id": "YellowDoc"
}
```

lcon

```
{
"IsFileTypeIcon": true,
"IsInternalIcon": false,
"IsValid": true,
"FileType": "PDF",
"Id": "Unknown"
}
```

Complete Example Record Context

This example shows the properties available on each of the objects in the Record context (summarized earlier in this document). As can be seen most properties are not simple objects but, depending on their type contain a number of properties.

```
{
"TrimType": "Record",
"RecordAssignee": {
"TrimType": "Location",
"LocationFormattedName": {
"Value": "David"
},
"Uri": 1,
"StringValue": "David",
"Icon": {
"IsFileTypeIcon": false,
"IsInternalIcon": true,
"IsValid": true,
"FileType": "",
"Id": "LocPerson"
}
},
"RecordAuthor": {
"TrimType": "Location",
"Uri": 123,
"StringValue": ""
},
"RecordCheckedOutTo": {
"TrimType": "Location",
"Uri": 0,
"StringValue": ""
},
```

```
"RecordContainer": {
"TrimType": "Record",
"Uri": 0,
"StringValue": ""
},
"RecordDateAssigned": {
"IsClear": false,
"IsTimeClear": false,
"DateTime": "2015-11-08T21:48:12.0000000Z",
"StringValue": "9/11/2015 8:48 AM"
},
"RecordDateCreated": {
"IsClear": false,
"IsTimeClear": false,
"DateTime": "2015-08-12T15:22:26.0000000Z",
"StringValue": "13/08/2015 2:22 AM"
},
"RecordDateRegistered": {
"IsClear": false,
"IsTimeClear": false,
"DateTime": "2015-11-08T21:48:12.0000000Z",
"StringValue": "9/11/2015 8:48 AM"
},
"RecordDocumentStatus": {
"Value": "Checked In",
"StringValue": "Checked In"
},
"RecordDocumentType": {
"Value": "Adobe Acrobat Document",
"StringValue": "Adobe Acrobat Document"
},
"RecordExtension": {
"Value": "PDF",
```

```
"StringValue": "PDF"
},
"RecordHomeLocation": {
"TrimType": "Location",
"LocationFormattedName": {
"Value": "Adelaide"
},
"Uri": 900000000,
"StringValue": "Adelaide",
"Icon": {
"IsFileTypeIcon": false,
"IsInternalIcon": true,
"IsValid": true,
"FileType": "",
"Id": "LocUnit"
}
},
"RecordIsCheckedOut": {
"Value": false,
"StringValue": "Checked In"
},
"RecordIsContainer": {
"Value": false,
"StringValue": "No"
},
"RecordIsElectronic": {
"Value": true,
"StringValue": "Yes"
},
"RecordLastPartRecord": {
"TrimType": "Record",
"RecordExtension": {
"Value": "PDF"
```

```
},
"RecordIsElectronic": {
"Value": true
},
"RecordNumber": {
"Value": "REC_411"
},
"RecordTitle": {
"Value": "15-532471"
},
"Uri": 900000378,
"StringValue": "REC_411",
"Icon": {
"IsFileTypeIcon": true,
"IsInternalIcon": false,
"IsValid": true,
"FileType": "PDF",
"Id": "Unknown"
}
},
"RecordNumber": {
"Value": "REC_411",
"StringValue": "REC_411"
},
"RecordOwnerLocation": {
"TrimType": "Location",
"LocationFormattedName": {
"Value": "Adelaide"
},
"Uri": 900000000,
"StringValue": "Adelaide",
"Icon": {
"IsFileTypeIcon": false,
```

```
"IsInternalIcon": true,
"IsValid": true,
"FileType": "",
"Id": "LocUnit"
}
},
"RecordRecordType": {
"TrimType": "RecordType",
"RecordTypeAllowParts": {
"Value": true
},
"RecordTypeAllowReplace": {
"Value": true
},
"RecordTypeAllowVersions": {
"Value": true
},
"RecordTypeLevel": {
"Value": 2
},
"RecordTypeMoveWhenReadOnly": {
"Value": false
},
"RecordTypeName": {
"Value": "Document"
},
"RecordTypeStoreType": {
"Value": "UseStore",
"StringValue": "Use A document store"
},
"RecordTypeTitlingMethod": {
"Value": "FreeText",
"StringValue": "Free Text"
```

```
},
"RecordTypeUsualBehaviour": {
"Value": "Document",
"StringValue": "Document"
},
"Uri": 2,
"StringValue": "Document",
"Icon": {
"IsFileTypeIcon": false,
"IsInternalIcon": true,
"IsValid": true,
"FileType": "",
"Id": "YellowDoc"
}
},
"RecordRequests": {
"Value": "",
"StringValue": ""
},
"RecordSpURL": {
"Value": "",
"StringValue": ""
},
"RecordTitle": {
"Value": "15-532471",
"StringValue": "15-532471"
},
"IsInFavorites": false,
"EnabledCommandIds": [
"Properties",
"RecCheckOut",
"RecCheckIn",
"RecNewPart",
```

"RecNewVersion",

"RecAddRetrieveTemporaryRequest",

"RecContainer",

"RecOwnerLoc",

"RecAddContact",

"ShowContacts",

"RecCurrentLoc",

"RecHomeLoc",

"RecRemoveContact",

"RecShowRequests",

"RecAddRetrieveTemporaryRequest",

"RecAddRetrieveRecurrentRequest",

"RecAddRetrievePermanentRequest",

"RecAddPickupTemporaryRequest",

"RecAddPickupPermanentRequest"

],

"Icon": {

"IsFileTypeIcon": true,

"IsInternalIcon": false,

"IsValid": true,

```
"FileType": "PDF",
```

"Id": "Unknown"

},

"Uri": 9000000378

Appendix C Configuring OpenID connect

OAuth authentication is managed via OpenID connect authentication. The authentication is configured in your Identity Provider (e.g. Azure AD) and then the appropriate details are stored in Content Manager in the hptrim.config file, for the Web Client and ServiceAPI. The following sections describes creating ADFS applications, Azure AD applications, Google credentials and configuring the Content Manager web application.

Configuring Active Directory Federation Services (ADFS) authentication

Creating an ADFS application

To create an ADFS application, perform the following:

- 1. Create a new Application Group.
- 2. In the Add Application Group wizard Welcome page, type the name in the **Name** field and select **Server application accessing a web application** template. Click **Next**.

翰 Add Application Group W	izard
Welcome	
Steps	Name:
Welcome	Му СМ Арр
Server application	Description:
 Configure Application Credentials 	
Configure Web API	
Apply Access Control Policy	Template:
 Configure Application Permissions 	Client-Server applications
Summary	Native application accessing a web API
Complete	Server application accessing a web API
	Web browser accessing a web application
	Standalone applications
	Native application

3. In the Server application page General tab, type the name in the **Name** field, note the **Client Id** and add a **Redirect URI**.

NOTE: Make sure that the Redirect URI is in lowercase and is the URL of the Content Manager web site with the suffix /**serviceapi/auth/openid**. For example, https://myserver/contentmanager/serviceapi/auth/openid.

1 Web Client DC - Server application Properties	
eneral Confidential	
News	
Name:	
CM Web Client DC - Server application	
Client Id:	
9eeda8c0-b3a2-43c5-aa45-34930f0dc8ff	
Redirect URI:	
Redirect URI:	Add
Redirect URI:	Add

- 4. Click Next.
- 5. In the Configure Application Credentials page, select **Generate a shared secret** checkbox. Make a note of it or copy it to the clipboard.

Configure Application	Credentials
Steps Welcome Server application Configure Application Credentials Configure Web API	Select credentials used by the application to authenticate itself with AD FS when requesting access tokens. Register a key used to sign JSON Web Tokens for authentication Configure Windows Integrated Authentication
 Apply Access Control Policy Configure Application Permissions Summary 	Select the AD Account: Example: CONTOSO\expensevc Select Generate a shared secret Secret:
 Complete 	bEa-ZY4rSNLwAW9mFoLDr23ax8sWso2bZxvlim_ Copy to clipboard Copy and save the secret. You will not be able to view the secret after the application group is created. You can reset the secret later if required.

- 6. Click Next.
- 7. In the Configure Web API page, add an identifier. For example, https://MyServer/contentmanager/.

翰 Add Application Group V	Vizard	
Configure Web API		
Steps	Name:	
Welcome	My CM App - Web API	
Server application	ldentifier:	
 Configure Application Credentials 	Example: https://Contoso.com	
Configure Web API	https://www.contentmanager/	F
Apply Access Control Policy		
 Configure Application Permissions 		
Summary	Description:	
 Complete 		

- 8. Click Next.
- 9. In the Apply access control policy page, choose an access control policy. For example, Give access to everyone.
- 10. Click Next.
- 11. In the Configure application permissions page, select email, openid, and profile checkboxes.
- 12. Verify the information in the Summary page and complete creating the new application group.

Updating hprmServiceAPI.config

To configure the Content Manager Web Client, edit the hprmServiceAPI.config file and add (or edit) the authentication element.

- 1. Navigate to the Content Manager Web Client install folder. For example, C:\Program Files\Micro Focus\Content Manager\Web Client.
- 2. Open the hprmServiceAPI.config file in a text editor.
- 3. Add the <authentication> element. For example,

```
<authentication allowAnonymous="false" slidingSessionMinutes="30">
   <openIdConnect>
        <add
            name="openid"
            clientID="Client ID noted when creating Application group "
            clientSecret="Client secret noted when creating Application group"
            issuerURI="https://yourvm.myexch19.com/adfs/.well-known/openid-
configuration"</pre>
```

```
</openIdConnect> </authentication>
```

You can find the issuerURI in the AD FS console - Endpoints, in the OpenID Connect section.

IMPORTANT: Replace the clientID, clientSecret, and issuerURI values in the highlighted example with your own value.

Configuring the ADFS for Office/Outlook Addins

The office integration requires an access token to allow it to authenticate with the Web Client, this can be configured in ADFS, perform the following:

- 1. Go to the Application Group created earlier in Creating an ADFS application, on page 52.
- 2. Click **Add Application** to add a native application and note the Client ID for later use.

🏟 Add a new application	翰 Add a new application to CM Web Client Sample				
Native application					
Steps	Name:				
Welcome	CM Web Client Sample - Native application 1				
 Native application 	Client Identifier:				
 Summary Complete 	b93b7949-4715-4238-9a66-01b9663b4e75				
	Redirect URI:				
	Example: https://Contoso.com Ad				
	https://myserver/contentmanager				

- 3. Complete the native application steps.
- 4. Edit the Web API application and in the **Client Permissions** add the new client application selecting the scopes email, openid and profile.

CM Web (Client Sa	mple - Web API Prop	erties				
Identifiers	Notes	Access control policy	Issuance Transform	n Rules	Client	Permissions	
Configure	applicatio	n permissions to enable	client applications t	o acess t	this Web	b API	
Client a	pplication	(caller):					
Name				Des	cription		
CM W	eb Client	Sample - Server applica	ation				
		Sample - Native applica					
<			[Add.		Remove	
Permitte	d scopes						
Sc	ope Nam	e Description					
🗌 alla	atclaims	Requests the acc	Requests the access token claims in the identity token.				
az	а	Scope allows brok	Scope allows broker client to request primary refresh token.				
🗹 em	ail	Request the emai	Request the email claim for the signed in user.				
	on_cert	The logon_cert so	The logon_cert scope allows an application to request logo				
✓ op	enid	Request use of th	e OpenID Connect	authoriza	tion pro	tocol.	
✓ pro	ofile	Request profile re	lated claims for the s	signed in	user.		

5. In Issuance Transform Rules page, add a new Rule.

	t LDAP attributes. Specify how the attribute	DAP attributes as claims. Select an attribute store from which es will map to the outgoing claim types that will be issued
Claim rul	e name:	
MyRule		
Rule ten Attribute	plate: Send LDAP Attributes as Claims store:	
	Directory	~
Mapping	of LDAP attributes to outgoing claim types	C
	LDAP Attribute (Select or type to add more)	Outgoing Claim Type (Select or type to add more)
•	Display-Name 🗸	Name 🗸
	User-Principal-Name 🗸	UPN ~
	~	~

- 6. Select Send LDAP Attributes and click Next.
- 7. Choose Active Directory as the attribute store.
- 8. Map the following claims:
 - Display Name Name
 - User-Principal-Name UPN
- 9. Complete and **Finish** the steps.

Add the office integration settings to the Web Client

The office integration authentication settings are stored in the file ADFS\config.xml in the web client install directory. To add the settings, perform the following:

- 1. Navigate to the Content Manager Web Client install folder and find the folder ADFS. For example, C:\Program Files\Micro Focus\Content Manager\Web Client\ADFS.
- 2. Open the file config.xml file in a text editor.
- 3. Add the <adfsClient> element. For example,

```
<adfsClient>
  <clientAuthority>URL to your AD FS server</clientAuthority>
  <clientResourceUri>relying party identifier from the AD FS Web
API</clientResourceUri>
  <clientID>Client ID from the AD FS native application</clientID>
  <clientReturnUri>Redirect URI from the AD FS native
  application</clientReturnUri>
  </adfsClient>
```

IMPORTANT: Replace the clientAuthority, clientResourceUri, clientID, and clientReturnUri values in the highlighted example with your own value.

NOTE: Make sure that the clientResourceUri is exactly same as the value used in **ADFS Application Group > Web API > Relying Party** Identifier and the clientReturnUri is exactly same as the value used in ADFS **Application Group > Native Application > Redirect URI**. This is because, the Office integration compares this configuration data with the existing identifier in ADFS, which is case sensitive. Therefore, any difference will result in a failure of the integration.

Frequently Asked Questions

How do I enable more logging?

In order to make it easier to troubleshoot problems, it will be useful to enable additional logging. In the Web.config, before the end of Configuration, insert the following config. Change the path in the initializeData attribute under *sharedListeners* to where you want the log to be written to.

```
<system.diagnostics>
    <trace autoflush="true" />
    <sources>
      <source name="System.Net">
        <listeners>
          <add name="System.Net" />
        </listeners>
      </source>
      <source name="System.Net.HttpListener">
        <listeners>
          <add name="System.Net" />
        </listeners>
      </source>
      <source name="System.Net.Sockets">
        <listeners>
          <add name="System.Net" />
        </listeners>
      </source>
      <source name="System.Net.Cache">
        <listeners>
          <add name="System.Net" />
        </listeners>
      </source>
    </sources>
    <sharedListeners>
      <add name="System.Net" type="System.Diagnostics.TextWriterTraceListener"</pre>
initializeData="C:\mylogs\System.net.trace.log" traceOutputOptions="ProcessId,
DateTime" />
    </sharedListeners>
    <switches>
      <add name="System.Net" value="Verbose" />
      <add name="System.Net.Sockets" value="Verbose" />
      <add name="System.Net.Cache" value="Verbose" />
      <add name="System.Net.HttpListener" value="Verbose" />
    </switches>
  </system.diagnostics>
```

You should then see the logs created. If you don't see the log files generated, manually create the mylogs folder.

mylogs				_
🌀 🕞 🚽 🔸 Computer 🕞 Local Disk (C:) + mylogs	•	Search mylogs	
Organize 💌 Include in Ibrary 💌 Shar	e with 🔻 Burn New folder			i 🕶 🖬
No. 100 Desktop	▲ Name	Date modified	Туре	Size -
Downloads Dropbox	System.net.trace.log	28/08/2015 6:43 PM	Text Document	7,013 KB
Secent Places	f801f716-c355-4d56-8556-ff003a619a605ys	28/08/2015 6:26 PM	Text Document	332 KB
in Google Drive	dd48969a-d5e5-42ab-80bb-65d8b09f370d5	28/08/2015 6:35 PM	Text Document	314 KB
	2b8c1cf9-98c8-436f-a146-df7291a35b205ys	28/08/2015 6:23 PM	Text Document	1 KB
· motoralizate	3d3c57a7-c288-4d1f-9ec6-44ed4446b85b5y	28/08/2015 6:32 PM	Text Document	1 KB
	9ef0c9c2-0310-4d75-bf31-e3b6b0603da95y	28/08/2015 5:52 PM	Text Document	1 KB
Torrestation and the	16abdf96-2cfb-4a8d-9797-b69ebd3c6bb1Sy	28/08/2015 6:15 PM	Text Document	1 KB
100 (100 mg	B1cd6137-a1c9-4286-8650-20e4adfcb6635y	28/08/2015 6:36 PM	Text Document	1 KB
	d2e37c8b-732e-481e-91b0-fcad3e1e0a485y	28/08/2015 6:26 PM	Text Document	1 KB
🪙 Libranes	Bd7cb669-495d-40eb-b73e-3f831f47a8fe5y	28/08/2015 6:20 PM	Text Document	1 KB
Documents	📄 8932ef9b-86a7-4135-9daa-544dfd6269a15y	28/08/2015 6:17 PM	Text Document	1 KB
J Music	7016997b-09d6-48dd-b93c-945b8124d6f25	28/08/2015 6:27 PM	Text Document	1 KB
Pictures	c593582e-60ff-42bd-85cf-3c7fc11aad885ys	28/08/2015 6:34 PM	Text Document	1 KB
Subversion Meas	cce9c318-cb11-44e0-953a-1a26d26680605y	28/08/2015 6:33 PM	Text Document	1 KB
Alicus	d39b86ca-9dbb-4e11-9d53-be487e63cb155	28/08/2015 6:22 PM	Text Document	1 KB
💻 Computer	f8dc0a43-478c-4268-bb23-7a24920a84325y	28/08/2015 6:41 PM	Text Document	1 KB
Local Disk (C:)	_			

The remote certificate is invalid according to the validation procedure

Server Error in '/rm82' Application.

The remote certificate is invalid according to the validation procedure. Description: An unbedded ecception occurred during the execution of the current web request. Please review the stack frace for more information about the error and where it originated in the code. Exception Details: System Secuty Authentication Authentication Ecception: The remote certificate is invalid according to the validation procedure. Source Error:
Line 67: if (Istring.IsNullOrEmpty(metadataAddress)) Line 68: { Line 59: ValidatingIssuerNameRegistry.WriteToConfig(metadataAddress, configPath); Line 70: } Line 71: }
Seurce File: d W2thin/Phoeta/tP-JPTRM/Web/Oktaslassaccs Line: 60 Stack Trace:
<pre>[AuthenticationException: The remote certificate is invalid according to the validation procedure.] System.Net.Security.SelState.StartSendAuthResetSignal(ProtocolToken message, AsynCProtocolRequest asyncRequest) +481 System.Net.Security.SelState.ProcessRecivedBloc(Byte[] buffer, Int32 count, AsynCProtocolRequest asyncRequest) +481 System.Net.Security.SelState.ProcessRecivedBloc(Byte[] buffer, AsynCProtocolRequest asyncRequest) +481 System.Net.Security.SelState.StartSendBloc(Byte[] buffer, AsynCProtocolRequest asyncRequest) +481 System.Net.Security.SelState.NetSecurity.SelState.StartSendBloc(Byte] buffer, AsynCProtocolRequest asyncRequest) +481 System.Net.Securi</pre>

This is most likely caused by a certificate error. By enabling logging, the error may be something along these lines below.

System.Net Information: 0 : [9504] SecureChannel#3908756 - Remote certificate has errors:

System.Net Information: 0 : [9504] SecureChannel#3908756 - A certificate chain could not be built to a trusted root authority.

System.Net Information: 0 : [9504] SecureChannel#3908756 - Remote certificate was verified as invalid by the user.

System.Net Error: 0 : [9504] Exception in HttpWebRequest#2237113:: - The underlying connection was closed: Could not establish trust relationship for the SSL/TLS secure channel.

Solution

To resolve this problem, the root certificate from the ADFS server must be trusted by the client. Log on to the ADFS Server, export the required certificate from a trusted root authority and import it on the client's machine into the trusted root authority.

To export certificate, on the AD FS Server, please refer to the following screenshot:

File Action View Favorites Window Hel	P	Root\Certificates (Local Comp	uter)\Trusted R	loot Certification	Authorities\C	
Console Root Console Root Console Root Contincates (Local Computer) Certificates (Local Computer) Certificates Certificates Certificates Certificates Certificates Certificates Control Certification Authonities Certificates Control Certifica		Issued By Baltimore CyberTrust Root Class 3 Public Primary Certificatio Copyright (c) 1997 Microsoft Corp. DigiCert High Assurance EV Root Equifax Secure Certificate Authority GTE CyberTrust Global Root Microsoft Authenticade(tm) Root Microsoft Root Cartificate Authori Microsoft Root Certificate Authori Microsoft Root Certificate Authori No LIABILITY ACCEPTED, (c)97 V	Expiration Date 13/05/2025 2/06/2028 31/12/1999 10/11/2031 23/08/2018 14/08/2018 14/08/2018 14/08/2018 14/07/2020 31/12/2020 10/05/2021 23/03/2016 8/01/2004	Intended Purposes Server Authenticath Secure Email, Clien Time Stamping Server Authenticath Secure Email, Serv Secure Email, Clien Secure Email, Code (All) (All) (All) (All) Time Stamping	Baltimore Cy t VeriSign Clas Microsoft Ti DigiCert e GeoTrust t GTE CyberTr	berTru 13 3 Pu mesta ust Glo rthenti ot Aut ot Cert ot Cert ot Cert
 Remote Desktop Certificate Enrollment Requests Smart Card Trusted Roots Trusted Devices Web Hosting 	Stetteam-ADFOWEBSUR1-CA	testeem-ADFSWEBSVR1-CA Thavte Timestamping CA VeriSign Class 3 Public Primary Ce	12/03/2020 1/01/2021 17/07/2036	Server Autt	zhlone≥ Dpen Ull Tasks → Cut Copy Delete Iroperties Help	amp Open Export

After the export is successful, you can import this certificate to the client's machine (into the Trusted Root Certificate Authorities).

Personal Certificates Certi						
 Personal Go Daddy Class 2 Certification Authom Go Daddy Class 2 Certification Authom Go Daddy Class 2 Certification Authom Go Daddy Root Certificate Authom Internediate Certification Authom Certificates Internediate Certification Authom Certificates Microsoft Root Authomity Microsoft Root Certificate Authomity<th></th><th>Issued To 🔺</th><th>Issued By</th><th>Expiration Date</th><th>Intended Purposes</th><th>Fr</th>		Issued To 🔺	Issued By	Expiration Date	Intended Purposes	Fr
Certificates Certificate Certifica	Certificates (Local Computer)	GlobalSign Root CA	GlobalSign Root CA	28/01/2028	Server Authenticatio	G
Trusted Root Certification Authorities Gertification Authorities Gertification Authorities Gertification Authorities Gertification Authorities Gertificates Gertific		Go Daddy Class 2 Certification Au	Go Daddy Class 2 Certification Auth	30/06/2034	Server Authenticatio	G
Image: Sector Frust Company		Go Daddy Root Certificate Authori	Go Daddy Root Certificate Authority	1/01/2038	Server Authenticatio	Gt
 Enterprise Trust Enterprise Trust Intermediate Certification Authorities Certificate Revocation List Certificate Revocation List Certificates Trusted Publishers Certificates Intrusted Certificates Intrusted Certificates Intrusted Certificates Intrusted Certificates Certificates Microsoft Root Certificate Authority Microsoft Root Certificate Microsoft Root Certificate		GTE CyberTrust Global Root	GTE CyberTrust Global Root	14/08/2018	Secure Email, Client	GI
Intermediate Certification Authorities Certificate Revocation List Certificates Trusted Publishers Certificates Certificates Untrusted Certificates Certificates Untrusted Certificates Microsoft Authority Microsoft Root Certificate		Hewlett-Packard Company	VeriSign Class 3 Code Signing 2004 CA	19/12/2011	Code Signing	<1
Certificate Revocation List Certificate Revocation List Certificates 101/2014 <al> <al> Certificates Trusted Publishers Certificates Sol(12/2012) <al> <al> Certificates Certificates Hewlett-Packard Primary Class 2 Cer 23/08/2021 <al> <al> Certificates Certificates Hewlett-Packard Primary Class 2 Cer 23/08/2021 <al> <al> Microsoft Authenticode(tm) Root Microsoft Authenticode(tm) Root Microsoft Root Certificate Authority Secure Email, Code S Mi Microsoft Root Certificate Authority Microsoft Root Certificate Authority Microsoft Root Certificate Authority 31/12/2000 <al> Smart Card Trusted Roots Microsoft Root Certificate Authority Microsoft Root Certificate Authority 23/08/2021 <al> Microsoft Root Certificate Authority 31/12/2000 <al> Microsoft Root Certificate Aut</al></al></al></al></al></al></al></al></al></al></al></al></al></al></al></al>		Hewlett-Packard Primary Class 2	Hewlett-Packard Primary Class 2 Cer	30/12/2012	<ai></ai>	<
Certificates Microsoft Root Certificate Authority Siterified Class 2 Certification Authority Siterified Class 2 Certification Authority Starfield Class 2 Certificate Authority Starfield		Hewlett-Packard Primary Class 2	Hewlett-Packard Primary Class 2 Cer	1/01/2014	<al></al>	<
 Trusted Publishers Hewlett-Packard Private Class 2 Cm. 23/08/2021 Call> Chrificates Untrusted Certificates Untrusted Certificates Third-Party Root Certification Authority Trusted Poole Microsoft Root Certificate Authority Microsoft Root Certificate Microsoft Root Certif		Hewlett-Packard Primary Class 2 T	Hewlett-Packard Primary Class 2 Tes	30/12/2012	<ai></ai>	4
Certificates Implementation Certificates Certificates Certificates Microsoft Root Certificate Authority Microsoft Root Authoriticate Authority Microsoft Root Certificate Authority <td< td=""><td></td><td>Hewlett-Packard Private Class 2 C</td><td>Hewlett-Packard Private Class 2 Cer</td><td>23/08/2021</td><td><ai></ai></td><td>⊲</td></td<>		Hewlett-Packard Private Class 2 C	Hewlett-Packard Private Class 2 Cer	23/08/2021	<ai></ai>	⊲
 Uhtrusted Certificates Certificates Third-Party Root Certification Authority Third-Party Root Certification Authority Microsoft Root Certificate Authority Microsoft Root Certificate Microsoft Root Certificate Authority Microsoft Root Certificate Authority Microsoft Root Certificate Microsoft Root		Hewlett-Packard Private Class 2 T	Hewlett-Packard Private Class 2 TE5	20/06/2021	<al></al>	<
Certificates Microsoft Root Authority 31/12/2020 <al> Microsoft Root Certificate Authority Certificates Microsoft Root Certificate Authority Microsoft Root Certificate Authority 10/05/2021 <al> Microsoft Root Certificate Authority Trusted People Microsoft Root Certificate Authority Microsoft Root Certificate Authority 23/02/205 <al> Microsoft Root Certificate Authority Smart Card Trusted Roots Microsoft Root Cartificate Authority Microsoft Root Certificate Authority 23/02/205 <al> Microsoft Root Certificate Authority Smart Card Trusted Roots Microsoft Root CA 2 QuoVadis Root CA 2 QuoVadis Root CA 2 Sint Cartificate 23/02/2026 Server Authentication QR Smart Card Trusted Roots SecureTrust CA SecureTrust CA 101/2030 Server Authentication RS Server Authentication Staffield Class 2 Certification Authority Sinfield Class 2 Certification Authority Sinfield Class 2 Certification Authority Sinfield Class 2 Certification Staffield Class 2 Certification Authority Sinfield Class 2 Certification Authority Sinfield Class 2 Certification Staffield Class 2 Certification Authority Sinfield Class 2 CA 11 101/2030 Server Authentication Staffield Class 2 CA 11 Server Authenticatio Staffield Services Root Certificate Authority</al></al></al></al>		Microsoft Authenticode(tm) Root	Microsoft Authenticode(tm) Root Au	1/01/2000	Secure Email, Code S	Mi
 Third-Party Root Certification Authorit Certificates Trusted People Remote Desktop Smart Card Trusted Roots Trusted Devices Trusted Devices Trusted Devices Trusted Devices All> Microsoft Root Certificate Authorit, Microsoft Root Certificate Authority Microsoft Root Certificate Microsoft Root C		Microsoft Root Authority	Microsoft Root Authority	31/12/2020	<ai></ai>	Mi
Certificates Microsoft Root Certificate Authorit Microsoft Root Certificate Authority 24/06/2035 <al> Mil E Trusted People Microsoft Root Certificate Authorit Microsoft Root Certificate Authority 23/03/2036 <al> Mil E Remote Desktop Microsoft Root Certificate Authorit Microsoft Root Certificate Authority 23/03/2036 <al> Mil E Smart Card Trusted Roots QuoVadis Root CA 2 QuoVadis Root CA 2 25/11/2031 Server Authenticatio QuoVadis Root CA 2 E Trusted Devices Security 2048 V3 RSA Security 2048 V3 23/02/2026 Server Authenticatio RS Splan Cortificate Spl Root Certificate Spl Root Certificate Microsoft Root Certificate No 1/01/2030 Server Authenticatio RS Splan Cortification Authority Starfield Class 2 Certification Authority Starfield Services Root Certificate Starfield Services Root Certificate Starfield Services Root Certificate Starfield Services Root Certification Authority Starfield Services CA 1/01/2030 Server Authenticatio Starfield Services Root Certificate Starfield Services Root Certificate Starfield Services Root Certificate Starfield S</al></al></al>		Microsoft Root Certificate Authority	Microsoft Root Certificate Authority		<al></al>	Mi
Image: Starfield Case 2 Certificate Authonity Starfield	_	Microsoft Root Certificate Authori	Microsoft Root Certificate Authority	24/06/2035	<ai></ai>	Mi
Image: Signart Card Trusted Roots Image: Card Trusted Roots Image: Card Trusted Roots Image: Card Trusted Devices Image: Card Trusted Roots Image: Card Trusted Devices Image: Card Truste			Microsoft Root Certificate Authority		<ai></ai>	Mi
Image: Secure	🗉 🧮 Remote Desktop	NO LIABILITY ACCEPTED, (c)97 V	NO LIABILITY ACCEPTED, (c)97 Veri	8/01/2004	Time Stamping	Ve
SecureTrust CA SecureTrust CA 1/01/2030 Server Authenticatio Tr SecureTrust CA 1/01/2030 Server Authenticatio Tr SPI Root Certificate SPI Root Certificate 16/09/2015 <aii> <ii> Starfield Class 2 Certification Authority 30/06/2034 Server Authenticatio St Starfield Services Root Certificate Starfield Services Root Certificate Authority 10/07/2036 Server Authenticatio St Starfield Services Root Certification Authority Starfield Services Root Certification Authority 18/09/2036 Server Authenticatio St Starfield Services Root Certification Authority Starfield Services Root Certification Authority 18/09/2036 Server Authenticatio St Starfield Services Root Certification Authority StarfCom Certification Authority 18/09/2036 Server Authenticatio St StartCom Certification Authority StartCom Certification Authority 18/09/2036 Server Authenticatio St Thavte Remaine Server CA testeam-ADFSWEBSVRI-CA 12/03/2020 cAI></ii></aii>	Smart Card Trusted Roots	QuoVadis Root CA 2	QuoVadis Root CA 2	25/11/2031	Server Authenticatio	Q.
SPI Root Certificate SPI Root Certificate 16/09/2015 <al> <</al>	Trusted Devices	RSA Security 2048 V3	RSA Security 2048 V3	23/02/2026	Server Authenticatio	RS
SPI Root Certificate SPI Root Certificate 16/09/2015 <al> <</al>		SecureTrust CA	SecureTrust CA	1/01/2030	Server Authenticatio	Tr
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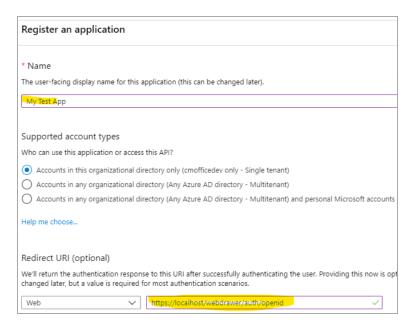
Configuring Azure AD authentication

Creating Azure AD application

To create the Azure AD application, perform the following:

- 1. Open the following URL portal.azure.com.
- 2. Click Azure Active Directory > App registrations > New registration.

The Register an Application page is displayed.



3. Type a name for your new application in the Name field.

4. Select the Supported account types.

For more information on each option of Supported account types, click Help me choose.

5. For Redirect URI, leave the Web selected.

NOTE: The value in Authorized redirect URIs must be in lowercase and the URL to your application (e.g. https://mydomain.com/cmwebdrawer) followed by the path to the authentication provider (for example /auth/openid). The /auth/ component is fixed but the 'openid' is the name you will supply in hprmServiceAPI.config later and so can be any string, as long as it matches the value in hprmServiceAPI.config. For the Web Client the path must include the path to the ServiceAPI, for example, https://mydomain.com/contentManager/serviceapi/auth/openid.

- 6. Click Register.
- 7. Add a secret from the Certificates and Secrets and note it for later.

Authentication	Thumbprint	Start date	Expires			
📍 Certificates & secrets	Na andificatas barra barra addad farathir a					
Token configuration	No certificates have been added for this application.					
- API permissions						
Expose an API	Client secrets					
Owners	A secret string that the application uses to prove its identity when requesting a token. Also can be referred to as application password.					
Roles and administrators (Previ	+ New client secret					
Manifest	Description	Expires Valu	e			
Support + Troubleshooting	My Secret	4/8/2021 BbAX	62-w]=cg4ritC:?0Qw=EFfYow29D			
P Troubleshooting						
New support request						

- 8. From the Authentication section, go to **Select the tokens you would like to be issued** and check the option **ID Tokens**.
- 9. From API Permissions, add the following delegated Microsoft Graph permissions:

- email
- offline_access
- openid
- profile
- User.Read

		ent process. The
dmin consent for	mftrim	
Туре	Description	Admin cons
Delegated	View users' email address	-
Delegated	Maintain access to data you have given it access to	-
Delegated	Sign users in	-
Delegated	View users' basic profile	-
	dmin consent for Type Delegated Delegated Delegated	Delegated View users' email address Delegated Maintain access to data you have given it access to Delegated Sign users in

10. Select Grant Admin Access permission to grant access to all permissions.

Updating the hprmServiceAPI.config or hptrim.config

To use the Auze AD application, edit the hprmServiceAPI.config in the Web Client or the hptrim.config in Service API and add the **<authentication>** element.

To do this, perform the following:

- Navigate to the Content Manager Web Client or Service API install folder. For example, C:\Program Files\Micro Focus\Content Manager\Web Client or C:\Program Files\Micro Focus\Content Manager\Service_API.
- 2. Open the hprmServiceAPI.config pr hptrim.config in a text editor.
- 3. Add the <authentication> element. For example,

```
<authentication allowAnonymous="false" slidingSessionMinutes="60">
  <openIdConnect>
    <add
      name="openid"
      clientID="application ID from the Azure AD application"
      clientSecret="Client secret noted when creating Azure AD application"
      issuerURI="https://login.microsoftonline.com/08363ee4-6592-4325-9d5a-
123456789/v2.0/.well-known/openid-configuration"
      />
      </openIdConnect>
```

```
</authentication>
```

You can get the issuerURI by navigating to **Overview > Endpoints > OpenID Connect** metadata document **IMPORTANT:** Replace the clientID, clientSecret, and issuerURI values in the highlighted example with your own value.

Enabling redirect

The Web Client will not redirect the authentication endpoint unless the **Html** feature is enabled in hprmServiceAPI.config file.

To enable redirect, perform the following:

- 1. Navigate to the Content Manager Web Client install folder and open the hprmServiceAPI.config in a text editor.
- 2. Search for the serviceFeatures property.
- 3. Add the feature Html.

For example,

```
<hptrim xmlns="http://HP.HPTRIM.CMIS/hptrimConfig.xsd"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" poolSize="1000"
trace="true" indexPagePath="/Home"
notFoundErrorHandler="/APIErrorPages/NotFound"
globalErrorHandler="/APIErrorPages/GlobalErrors" uploadBasePath="C:\Micro Focus
Content Manager\ServiceAPIWorkpath\Uploads" autoPoolClean="true"
serviceFeatures="Json,Razor,Xml,Html,PredefinedRoutes"
xsi:noNamespaceSchemaLocation="hptrimConfig.xsd">
```

Configuring logout link

For WebDrawer the logout link is configured in the uiSettings element. It should contain '~/auth/logout'.

In the Web Client a logout link will be displayed automatically when OpenID connect authentication is enabled.

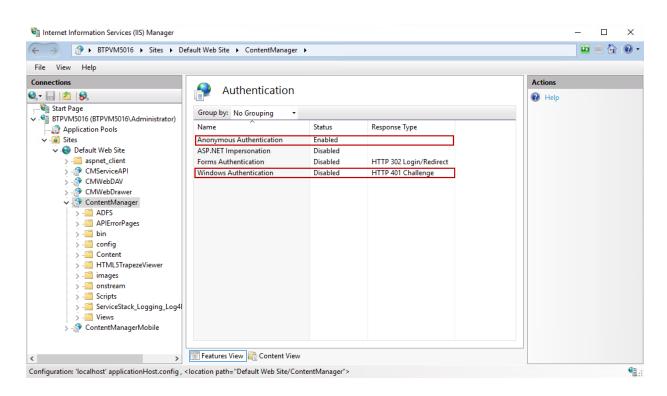
To configure logout link, perform the following:

- 1. Navigate to the Content Manager Web Drawer install folder. For example, C:\Program Files\Micro Focus\Content Manager\WebDrawer.
- 2. Open the hptrim.config in a text editor.
- 3. Add the logoutLink property to the uiSettings element. For example,

```
<uiSettings
logoutLink="~/auth/logout"
...
/>
```

Disabling IIS administration

Given that IIS windows integrated authentication will no longer be used disable it in IIS Manager and enable Anonymous, as seen here:



Configuring Web Client Azure OpenID for OneDrive integration

Content Manager Web Client supports checking out and checking in documents from OneDrive if you are logged in via AzureAD.

To configure the Web Client to authenticate via AzureAD, the **clientId**, **clientSecret**, and **issuerURI** parameters are required. These are the parameters noted during Creating an ADFS application, on page 52. The parameters can also be obtained from the Azure App registration portal.

Updating the configuration files

hprmServiceAPI.config

The Content Manager Web Client hprmServiceAPI.config must be updated to link it to Azure AD for authentication; The **clientId**, **clientSecret**, and **issuerURI** parameters along with the Office integration element must be added in the hprmServiceAPI.config file.

Open the hprmServiceAPI.config file in a text editor and add the **<authentication>** element. For example,

```
<authentication allowAnonymous="false" slidingSessionMinutes="30">
  <openIdConnect>
        <add name="openid"
            clientID="09f0ec5c-87e9-4568-8b60-4eb3e20de75e"
            clientSecret="ejmg+qZ9-Dk_N-uq1NNXFSGzP5fet2m3"
            issuerURI="https://login.microsoftonline.com/08363ee4-6592-4325-9d5a-5a25e00d482b/v2.0/.well-known/openid-configuration"/>
        </openIdConnect>
```

```
</authentication>
<officeIntegration version="1.6.109.0" guid="5d7bd8ba-11b0-46b1-98ab-
95fadd95a97d"/>
```

web.config

If you have proxy settings, you need to bypass the settings in the web.config file.

Add the </system.webServer> element. For example,

```
<system.net>
<defaultProxy>
<proxy
usesystemdefault="True"
proxyaddress="http://yourproxy.net:1234"
/>
</defaultProxy>
</system.net>
```

IMPORTANT: Replace the "http://yourproxy.net:1234" value in the highlighted example with your own value.

Once these parameters are configured, you will be redirected to Microsoft login page to login to the Web Client.

Configuring Google authentication

Creating Google credentials

To create Google credentials, perform the following:

- 1. Open the following URL https://console.developers.google.com/.
- 2. Click Credentials in the left pane and select the OAuth 2.0 Client IDs.
- 3. Set Web Applications as Application type.
- 4. Enter your domain in the Authorized JavaScript origins.
- 5. Enter the redirect URI in the Authorized redirect URIs.

NOTE: The value in Authorized redirect URIs must be in lowercase and the URL to your application (e.g. https://mydomain.com/cmwebdrawer) followed by the path to the authentication provider (for example /auth/openid). The /auth/ component is fixed but the 'openid' is the name you will supply in hprmServiceAPI.config later and so can be any string, as long as it matches the value in hprmServiceAPI.config. For the Web Client the path must include the path to the ServiceAPI, for example, https://mydomain.com/contentManager/serviceapi/auth/openid.

6. Click Create.

The Client ID and Client Secret will be displayed. Make a note of the Client ID and Client Secret to be used later.

Updating hprmServiceAPI.config

To use Google credentials, edit the hprmServiceAPI.config and add the <authentication> element.

To do this, perform the following:

- 1. Navigate to the Content Manager Web Client install folder. For example, C:\Program Files\Micro Focus\Content Manager\Web Client.
- 2. Open the hprmServiceAPI.config file in a text editor.
- 3. Add the <authentication> element. For example,

```
<authentication allowAnonymous="false" slidingSessionMinutes="2">
    <openIdConnect>
        <add
            name="openid"
            clientID="Client ID noted when creating Google credentials"
            clientSecret="Client secret noted when creating Google credentials"
            issuerURI="https://accounts.google.com"
            />
            </openIdConnect>
        </authentication>
```

IMPORTANT: Replace the clientID and clientSecret values in the highlighted example with your own value.

Enabling redirect

The Web Client will not redirect the authentication endpoint unless the Html feature is enabled in hprmServiceAPI.config file.

To enable redirect, perform the following:

- 1. Navigate to the Content Manager Web Client install folder and open the hprmServiceAPI.config in a text editor.
- 2. Search for the serviceFeatures property.
- 3. Add the feature Html.

For example,

```
<hptrim xmlns="http://HP.HPTRIM.CMIS/hptrimConfig.xsd"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" poolSize="1000"
trace="true" indexPagePath="/Home"
notFoundErrorHandler="/APIErrorPages/NotFound"
globalErrorHandler="/APIErrorPages/GlobalErrors" uploadBasePath="C:\Micro Focus
Content Manager\ServiceAPIWorkpath\Uploads" autoPoolClean="true"
serviceFeatures="Json,Razor,Xml,Html,PredefinedRoutes"
xsi:noNamespaceSchemaLocation="hptrimConfig.xsd">
```

Configuring logout link

For WebDrawer the logout link is configured in the uiSettings element. It should contain '~/auth/logout'.

In the Web Client a logout link will be displayed automatically when OpenID connect authentication is enabled.

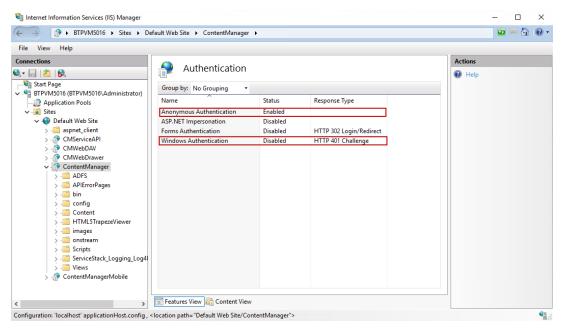
To configure logout link, perform the following:

- 1. Navigate to the Content Manager Web Drawer install folder. For example, C:\Program Files\Micro Focus\Content Manager\WebDrawer.
- 2. Open the hptrim.config in a text editor.
- 3. Add the logoutLink property to the uiSettings element. For example,

```
<uiSettings
logoutLink="~/auth/logout"
...
/>
```

Disabling IIS administration

Given that IIS windows integrated authentication will no longer be used disable it in IIS Manager and enable Anonymous, as seen here:



Appendix D Office Online Integration

Introduction

The Office Online integration is built into the Content Manager Web Client using Web Application Open Platform Interface (WOPI).

From the Web Client interface, it allows online editing of supported Microsoft Office documents to users with an Office Online subscription that includes editing ability.

Overview

Supported Versions of Office Online

The supported version of Office Online Server is 16.0.7766.8550 and later.

If you are installing your own Office Online instance on a local network, then configure to it use either HTTP or HTTPS, but not both. It is recommended you configure it to use HTTPS. Microsoft's own Office 365 online servers only support HTTPS communication

Supported File Types

Office Online Server delivers browser-based versions of Word, PowerPoint, Excel, and OneNote. Editing is supported for the newer XML style documents (i.e. .docx, .pptx, .xlsx). Older formats such as .doc can be converted to the newer native formats so that they may be edited. This conversion process is usually lossless, but is not guaranteed to be so, and may produce a newer version that is missing certain content or formatting.

The Office Online server broadcasts its capabilities about which actions may be performed on which formats as an XML feed via a HTTP request. The process of determining a server's capabilities via the XML feed is known as 'Discovery'. These capabilities are subject to change - and are highly likely to change - with successive revisions. The Content Manager integration will regularly try to rediscover the capabilities of the Office Online instance, determine which can be used and make them available to Content Manager users when the Office Online instance is upgraded.

Security

Users are issued tokens by the integration that grant them access to view/edit a document from Content Manager. When the Office server communicates with Content Manager on behalf of the user, it presents this token which is decrypted and verified. This token provides all the information we need to manipulate records in Content Manager. The encryption key is configured in one of the web server's configuration files. It is recommended that this is changed frequently to minimize the chance of security being compromised.

Configuring Office Online integration

Content Manager Web Server Configuration

NOTE: If configuring multiple instances of the Content Manager Web Server in order to use with a load balancer, then each instance within the load balanced cluster must be configured with the same values following the steps below.

• Once you have installed the Content Manager Web Client, from the Web Client installation directory, open the **HPRMServiceAPI.config** file using a text editor and find the section that includes:

<pluginAssemblies>

```
<!-- <add name="HP.HPTRIM.WebClient.WOPI"/> -->
```

<!-- <add name="HP.HPTRIM.WebClient.WebDAV"/> -->

</pluginAssemblies>

To enable the WOPI service handler and required buttons within the Web Client, uncomment the <add name="HP.HPTRIM.WebClient.WOPI"/> line in HPRMServiceAPI.config, and save the changes.

• In HPRMServiceAPI.config, find the section with the below attributes:

```
<officeOnlineServer host="" useSSL="true" allowSelfSignedSSL="false"
tokenEncKey="" tokenEncIV=""/>
```

Change the values of the attributes above to reflect your environment, so that 'host' is the **host name** of the Office Online Server, e.g. "myofficeonline.mynetwork.com".

Change the value of 'useSSL' to "false" if you have configured your Office Online Server instance to Allow HTTP and do not wish to use SSL.

Change the value of 'allowSelfSignedSSL' to "true" if you have configured your Office Online Server to use SSL with a Self Signed Certificate - Self Signed Certificates will otherwise be rejected.

Change the value of 'tokenEncKey' to be a 32 byte/64 character hexadecimal string which will be used as an encryption key to encrypt security tokens. As an example, you could use 'b12df00db1

Change the value of 'tokenEncIV' to be a 16 byte/32 character hexadecimal string which will be used as an initialization vector for security token encryption. As an example, you could use 'b12df00db12df00db12df00db12df00db12df00db'.

Save the changes.

• Open the **web.config** file in the Content Manager Web Client directory using a text editor and find the below section:

<modules runAllManagedModulesForAllRequests="true">

```
<!-- <add name="WOPIModule" type="HP.HPTRIM.WebClient.WOPI.WOPIModule" /> -->
```

</modules>

To authenticate the requests from the Office Online server on behalf of the Content Manager user, uncomment <add name="WOPIModule" type="HP.HPTRIM.WebClient.WOPI.WOPIModule" /> in web.config, and save the changes.

User Client Configuration

• The client PC web browsers must be configured to allow pop up windows from the Content Manager Web Client. If pop up windows are not enabled users will be prompted to allow them each time they edit a document, or depending on the settings, they will not be prompted at all, and will not be able to edit their documents using the Office Online editing functionality.

To configure Internet Explorer to allow pop windows from the Content Manager Web Client, add the Content Manager Web Client address to the list of trusted sites in the Pop-up Blocker Settings Exceptions list.

• If the Office Online Server is using SSL, the certificate must be trusted by client PCs.

Appendix E Multi Tenancy Configuration

Scope

This document outlines the steps required to configure Content Manager (CM) 9.2 or later Web Client to support multiple CM datasets.

This document is aimed at system administrators who wish to allow access to multiple CM datasets from a single server running the CM Web Client.

For the purpose of this document, a tenant consists of an application running in Internet Information Services (IIS) connecting to an existing CM dataset provided by a Workgroup server. Each CM Web Client application on IIS can access exactly one dataset.

NOTE: A CM dataset may be accessed by multiple IIS applications if required.

This document is presented as a guide showing how to set up and configure a new instance of a CM Web Client IIS application connecting to a specific dataset. This process may be repeated to create any number of applications.

This document assumes that the CM Web Client has been installed successfully and is working.

Advanced configuration of IIS applications is out of the scope of this document; for more information please consult the IIS documentation https://www.iis.net/

Configuration Steps

This section will outline the steps to create a new tenant.

Before beginning, ensure that the following information has been gathered:

- Name for the tenant (tenant name)
- Dataset Id of the CM dataset that the tenant will be accessing
- Connection information for the CM workgroup server that the tenant will be connecting to
- The name of the user account on the server that is trusted to connect to the selected CM workgroup server and dataset
- The IIS web site which will host the tenant
- The folder on the web server that will be used as the 'upload path' for the tenant. The upload path is the folder used to store files that are being uploaded to the server to be checked into CM.

Create Tenants folder

Underneath the installation folder of the CM web client, which is installed to by default,

C:\Program Files\Micro Focus\Content Manager\Web Client

Create a folder named Tenants:

C:\Program Files\Micro Focus\Content Manager\Web Client\Tenants

Create configuration file using sample

Copy the sample configuration file, **Tenant-sample.config** from the Web Client installation directory and paste it into the newly created **Tenants** folder.

Located in the installation folder into the tenants folder underneath the installation folder.

Rename the **Tenant-sample.config** file in the **Tenants** folder to be the name of the Tenant, e.g. ABCorp.config

Update the configuration file

The following sections must be updated as per installation of a standard CM Web Client:

- hptrim
- Setup
- Workgroupserver

In the **hptrim** section of the **hprmServiceAPI.config** file, the upload base path must be set to the folder that will be used as the upload path for the tenant.

In the **setup** section of the **hprmServiceAPI.config** file, ensure that the databaseld is set correctly, and the workpath has been set to a unique folder for this tenant.

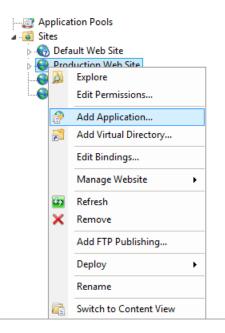
In the **workgroupserver** section of the **hprmServiceAPI.config** file, ensure that the connection details, including port, workpath and name have all been set correctly.

NOTE: the workpath attribute in the WorkgroupServer section and the uploadBasePath in the hptrim section must be the same.



Create a web application

Using IIS Manager, under the selected web site for this **tenant**, add an application. The default web site is acceptable to use. Consult the IIS documentation for more information about creating and managing multiple web sites within IIS.



In the Add application dialog, set the alias, physical path and application pool for the tenant.

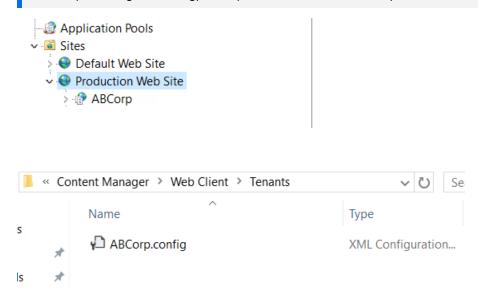
- Set the Alias of the application to be the Tenant name.
- The physical path of the application should be set to the location that binaries of the CM Web Client were installed, by default:

C:\Program Files\Micro Focus\Content Manager\Web Client

• Select an Application pool that has an identity that is trusted to connect to the dataset that this instance will be accessing. For information on setting up Application pools in IIS please consult the IIS documentation.

Add Application		?	×
Site name: Production Web sit Path: /	e		
Alias:	Application pool:		
ABCorp	Production Web site	Select	
Physical path: C:\Program Files\Micro Focus\Con Pass-through authentication	ntent Manager		
Connect as Test Settings			
Enable Preload			
	ОК	Cancel	

NOTE: The application name **must be the same** as the configuration file name in the Tenants folder (excluding the .config) Example – tenant named 'ABCorp':



Update logging

By default only one process can write to the log file. When setting up multiple tenants it is recommended that this is changed by changing the 'LockinModel' on Log4Net (minimalLock). Add the highlighted line to the **web.config** file in the directory containing the CM Web Client binaries.

```
<log4net>
    <appender name="RollingFileAppender"
type="log4net.Appender.RollingFileAppender">
      <lockingModel type="log4net.Appender.FileAppender+MinimalLock "/>
      <file value="C:\HPTRIM\ServiceAPIWorkpath\logs\log-file.txt" />
      <appendToFile value="true" />
      <rollingStyle value="Date" />
      <maximumFileSize value="1MB" />
      <staticLogFileName value="true" />
      <maxSizeRollBackups value="10" />
      <layout type="log4net.Layout.PatternLayout,log4net">
        <param name="ConversionPattern" value="%date [%thread] %-5level %logger -</pre>
%message%newline" />
      </layout>
    </appender>
    <root>
      <level value="ERROR" />
      <appender-ref ref="RollingFileAppender" />
    </root>
  </log4net>
```