



# **BlackBerry Enterprise Mobility Server**

**Configuring the BlackBerry Docs service**



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# BlackBerry Docs service

The Docs service supports the ability to add or delete access to storage providers and their repositories. The service allows you to configure and maintain folder and file repositories and user access policies for BlackBerry Dynamics mobile app users of the service. The service allows the mobile users to access, synchronize, and share documents using supported storage services.

The following table describes the supported storage services:

Versions	Description
On-premises	<p>The following storage services are supported without the need for VPN software, firewall reconfiguration, or duplicate data stores:</p> <ul style="list-style-type: none"><li>• Microsoft SharePoint</li><li>• Microsoft SharePoint Online</li><li>• Microsoft OneDrive for Business</li><li>• Box</li><li>• File Share</li><li>• CMIS-supported content management systems</li><li>• Work file server</li></ul> <p>For more information on how to configure the service in your environment, see <a href="#">Steps to configure the Docs service in an on-premises environment</a>.</p>
Cloud	<p><b>Note:</b> Tenants that have enabled the BEMS Docs service in the UEM Cloud environment before May 2025, the Docs service will function as expected until December 1, 2025. Feature enablement for the Docs service has been disabled for all existing and new tenants. For more information, see the <a href="#">UEM Cloud Dynamics service in UEM Cloud End-of-Life Notice</a>.</p> <p>Your BlackBerry UEM Cloud instance allows you to enable the Docs service in your environment for your UEM Cloud tenant. You configure the Docs service using the UEM Cloud management console. When this service is enabled, the following storage services are supported:</p> <ul style="list-style-type: none"><li>• Microsoft SharePoint</li><li>• Microsoft SharePoint Online</li><li>• Microsoft OneDrive for Business</li><li>• Box</li></ul> <p>File Share and CMIS-based repository storage providers are not supported. If your environment requires users to access File Shares or CMIS-based repositories, configure the Docs service in an on-premises BEMS instance. Enabling the Docs service in UEM Cloud and in an on-premises BEMS is not supported. For more information, see <a href="#">Configuring BlackBerry UEM to communicate with an on-premises BEMS</a> in the BEMS Installation content.</p> <p>For more information on how to configure the service in your environment, see <a href="#">Steps to configure the Docs service in a BlackBerry UEM Cloud environment</a>.</p>

# Steps to configure the Docs service in an on-premises environment

When you configure the BlackBerry Docs service, you configure the following components:

Step	Action
1	Configure the Database.
2	Configure the Web Proxy.
3	Configure the Docs network and security settings.
4	Configure storages.
5	Manage repositories.
6	In the BlackBerry UEM management console, add an app server hosting the Docs service to a BlackBerry Dynamics connectivity profile.
7	Auditing the Docs service.

## Configure the database connection for the BlackBerry Docs service

When you configure your Microsoft SQL Server database for the Docs service, you can use either Windows Authentication or SQL Authentication for granting access to the database by BEMS. The information is prepopulated with the information entered during installation.

1. In the **BlackBerry Enterprise Mobility Server Dashboard**, under **BlackBerry Services Configuration**, click **Docs**.
2. Click **Database**.
3. Enter the Microsoft SQL Server name.
4. Enter the database name.
5. In the **Authentication Type** drop-down list, select one of the following:
  - If you want to use the credentials of the Windows service account that was configured for the BlackBerry Connect service, click **Windows Authentication**.
  - If you want to use a Microsoft SQL Server account, click **SQL Server Login** and enter the SQL Server account username and password.
6. By default, the encrypt=false property is prepopulated in the **Additional properties** field during the installation and upgrade process. Existing properties that you have set are retained. Data that is sent between BEMS and

the SQL Server is not encrypted. If your environment requires data to be encrypted and the TLS certificate to be verified, complete the following steps:

**Note:** If you enable encryption for all data that is sent between BEMS and the SQL Server, it may cause higher than normal CPU usage.

- a. Import the CA certificate that is signing your SQL Server certificate into the Java certificate store. For more information, see [Import the CA certificate into the Java certificate store](#).
- b. Change the **encrypt** property to true and add **trustServerCertificate=false** separated by a semicolon (no space before or after the semicolon).

If your organization uses AlwaysOn support for SQL Server, add the property **MultiSubnetFailover=true**.

7. Click **Test** to verify the connection with the Microsoft SQL Server database.

8. Click **Save**.

**After you finish:**

- If your environment uses a web proxy to connect to the Internet, see [Configure a web proxy server for the Docs service](#).
- [Configure the Docs network and security settings](#)

## Configure a web proxy server for the Docs service

If you use a web proxy to connect your enterprise servers to the Internet for Microsoft SharePoint, Microsoft SharePoint Online, and Microsoft Office Web Apps (OWAS) or Office Online Server, you must complete the steps below.

1. In the **BlackBerry Enterprise Mobility Server Dashboard**, under **BlackBerry Services Configuration**, click **Docs**.
2. Click **Web Proxy**.
3. Select the **Use Web Proxy** check box.
4. In the **Proxy Address** field, type the FQDN of the web proxy server.
5. In the **Proxy Port** field, type the port number of the proxy server.
6. In the **Proxy Server Authentication Type** drop-down list, click an authentication type. If you select **Basic** or **NTLM authentication**, enter the required login credentials.
7. Click **Test** to verify the connection to the proxy server.
8. Click **Save**.

**After you finish:** [Configure the Docs network and security settings](#).

## Configure the Docs network and security settings

Docs security settings control acceptable Microsoft SharePoint Online domains, the URL of the approved Microsoft Office Web Apps (OWAS) and Office Online Server, the appropriate LDAP domains to use, whether you want to use Kerberos constrained delegation for user authentication, and Entra-IP authentication. Delegation allows a service to impersonate a user account to access resources throughout the network. Constrained delegation limits this trust to a select group of services explicitly specified by a domain administrator.

**Before you begin:** Verify that one or more of the following are configured in your environment:

- Kerberos constrained delegation for the BlackBerry Docs service is configured in your environment. For more information, see [Configuring Kerberos constrained delegation for the Docs service](#).

- Resource-based Kerberos constrained delegation for the BlackBerry Docs service is configured in your environment. For more information, see [Configuring resource-based Kerberos constrained delegation for the Docs service](#).
  - If your environment is configured to use Entra-IP, have the following information. For more information, see [Obtain an Entra app ID for the Docs component service](#).
    - Entra Tenant Name
    - BEMS Service Entra Application ID
    - BEMS Service Entra Application Key
  - Optionally, you can configure BEMS to allow users to authenticate to Microsoft SharePoint Online with an email address that is different from the email address that was used to install and activate BlackBerry Work. For more information, see [Enable the use of an alternate email address to authenticate to the Docs service](#).
1. In the **BlackBerry Enterprise Mobility Server Dashboard**, under **BlackBerry Services Configuration**, click **Docs**.
  2. Click **Settings**.
  3. To allow Docs to use Kerberos constrained delegation, select the **Enable Kerberos Constrained Delegation** check box.
  4. If your environment requires a separate account to administer KCD, select the **Use Separate Credential for Kerberos Constrained Delegation for Microsoft SharePoint** check box and enter the required credentials.
  5. Separated by a comma, enter each of the Microsoft SharePoint Online domains you plan to make available. For more information, see [Configuring support for Microsoft SharePoint Online and Microsoft OneDrive for Business](#).
  6. Enter the URL for your approved Office Web App or Office Online Server.
  7. Provide your Microsoft Active Directory user domains (separated by commas), then enter the corresponding **LDAP Port**. LDAP is used to look up users and their membership in user groups.
  8. Optionally, specify the timeout before the BEMS connection attempt to the LDAP server times out. In the **LDAP Connection Timeout** field, increase or decrease the value, in seconds, as required. This setting is valid only if **Use SSL for LDAP** is not enabled.
  9. Optionally, specify the timeout before the BEMS search for users and their membership in user groups times out. In the **LDAP Search Timeout** field, increase or decrease the value, in seconds, as required.
  10. To enable secure communication, select the **Use SSL for LDAP** check box.
  11. If your organization uses BlackBerry Workspaces, add the **Workspaces Public Key**. Adding the public key allows BEMS and the BlackBerry Workspaces server to communicate with each other. For more information about locating the public key, contact BlackBerry Technical Support Services.
  12. To allow Docs to authenticate to Entra-IP, select the **Enable Azure Information Protection** check box. Complete the **Azure registration** fields to authenticate Docs to Entra-IP to allow Docs to decrypt protected documents and confirm the rights any given user has on a document.
  13. Click **Save**.

**After you finish:** If your environment has deployed Entra-IP Rights Management Services and uses a web proxy, configure Windows with your proxy information, or BlackBerry Work users will receive a permission error message when they attempt to access protected documents. For more information, see [KB 139924](#).

## Configure the Docs service for Microsoft Office Web Apps and Office Online Server access

Microsoft Office Web Apps and Office Online Server provides browser-based versions of Word, PowerPoint, Excel, and OneNote. A single Microsoft Office Web Apps or Office Online Server can support Docs service users who access Office files through Microsoft SharePoint and File Shares. The new stand-alone deployment model means that you can manage updates to your Microsoft Office Web Apps, web apps, or Office Online Server independently of other Office Server products that are deployed in your organization. For information on supported file types, see [Appendix: Supported Microsoft Office Web Apps and Office Online Server file types](#).



### Before you begin:

- A Microsoft Office Web Apps or Office Online Server is installed and configured in your environment.
  - Verify that you have the Microsoft Office Web Apps or Office Online Server URL, and custom port if required. BEMS automatically adds */hosting/discovery* to the web address when BEMS performs a service discovery, so adding it to the web address is not required.
  - Add a registry key to enable strong cryptography on the Office Online Server. If this key is not added to the registry, users can't view or edit Microsoft Office Web Apps or Office Online Server files in BlackBerry Access and the Office Online Server log files log the error message "Could not create SSL/TLS secure channel". For more information, see the Known issues section of the [BEMS on-premises Release Notes content](#).
1. In the **BlackBerry Enterprise Mobility Server Dashboard**, under **BlackBerry Services Configuration**, click **Docs**.
  2. Click **Settings**.
  3. Under **Office Web App Server**, in the **Office Web App Server URL** field, type the web address of the Microsoft Office Web Apps or Office Online Server. For example, <https://officewebapps.example.com> or <https://officewebapps.example.com:1234> if a custom port is used.
  4. Click **Save**.
  5. On the **Office Web App Server** server, in the **Windows** folder, copy **Microsoft.CobaltCore.dll** file. By default, the file is located in `<drive>:\Windows\Microsoft .Net\assembly\GAC_MSIL\Microsoft .CobaltCore\`.
  6. On the computer that hosts the BEMS instance, browse to and paste the file into the lib folder at `<drive>:\Program Files\BlackBerry\BlackBerry Enterprise Mobility Server\Good Server Distribution\gems-quickstart-<version>\lib`.
  7. Restart the Good Technology Common Services service.
  8. On the computer that hosts the BEMS instance, export the SSL certificate to a file.
    - a) In the **BlackBerry Enterprise Mobility Server Dashboard**, under **BEMS System Settings**, click **SSL Certificate**.
    - b) Click **Download SSL Certificate**. By default, the `BemsCert.cer` file is saved to the Downloads folder.
  9. On the **Office Web App Server** server, add the SSL certificate to the Trusted Root CA of the computer account.
    - a) Open the Microsoft Management Console.
    - b) Click **File > Add/Remove Snap-in**.
    - c) In the **Available snap-ins** column, click **Certificates > Add**.
    - d) Select **Computer account**. Click **Next**.
    - e) Select **Local Computer**. Click **Finish**.
    - f) Click **OK**.
    - g) In the Microsoft Management Console, expand **Certificates (Local Computer)**.
    - h) Right-click **Trusted Root Certificate Authorities**. Select **All Tasks**.
    - i) Click **Import**.
    - j) In the **Certificate Import Wizard**, click **Next**.
    - k) Browse to the SSL certificate file you exported in step 8.
  10. Obtain the Microsoft Office Web Apps or Office Online Server SSL certificate.
  11. Add the Microsoft Office Web Apps or Office Online Server SSL certificate to BEMS. For more information, see [Importing CA Certificates for BEMS" in the BEMS-Core Configuration content](#).
  12. Repeat steps 8 to 11 for each BEMS instance in your environment.

### Configuring Kerberos constrained delegation for the Docs service

Configuring the Docs service to use Kerberos constrained delegation (KCD) for accessing resources such as Microsoft SharePoint and File Shares removes the requirement for end-users to provide their network credentials to access network resources using the Docs service.

Before configuring the Docs service to use KCD, it is important to understand that configuring KCD for the Docs service is independent of configuring BlackBerry Dynamics KCD. This means, for example, that if your mobile app (for example, BlackBerry Work) requires use of the Docs service exclusively, you only need to configure KCD for the Docs service. It is recommended to configure the Docs service to use resource-based Kerberos constrained delegation to access resources and remove the requirement for users to provide their network credentials to access resources within the domain, and between domains and forests. For more information on resource-based Kerberos constrained delegation, see [Configuring resource-based Kerberos constrained delegation for the Docs service](#).

All KCD transactions are between the Docs service account and the key distribution center (KDC) and respective resources. No KCD information is cached on the mobile app. The Docs service uses Microsoft's Service for User (S4U) specifications for KCD. For more information, see the Microsoft resource [Kerberos Protocol Extensions: Service for User and Constrained Delegation Protocol](#).

When you configure Kerberos constrained delegation (KCD) for Docs, you perform the following actions.

If you want to configure KCD for File Share repositories only, you can skip the Microsoft SharePoint configuration and skip directly to step 4, [Add Kerberos constrained delegation for file shares](#).

Steps	Action
1	Find the SharePoint application pool identity and port.
2	Create any required Service Principal Names (SPNs).
3	Add Kerberos constrained delegation for Microsoft SharePoint servers.
4	Add Kerberos constrained delegation for file shares.
5	Turn on Kerberos constrained delegation.

### Find the SharePoint application pool identity and port

**Before you begin:** Create a list of web applications that are going to be shared through the Docs service.

1. Open Windows Internet Information Services (IIS) Manager.  
Record any additional port numbers that are assigned if a web application was extended to create alternate access mappings.
2. Find the Application Pool identity in the **Application Pools** list view or in **SharePoint Central Administration > Security > Configure service accounts**.  
In most instances, for Kerberos constrained delegation (KCD) to work properly, the application pool identity user must be the same for all application pools whose applications will be accessed by the Docs service. This means you cannot have different application pools running under different users.
3. In **SharePoint Central Administration**, on the **Web Applications** tab, find the port for each of the web applications listed. Look in the **Alternate Access Mappings** view as necessary.

**After you finish:** [Create Service Principal Names](#).

## Create Service Principal Names

**Before you begin:** [Find the SharePoint application pool identity and port.](#)

Create a Service Principal Name (SPN) for each web application that needs to be shared as follows:

```
setspn -S HTTP/SPHOST:PORT <domain>\AppPoolUser
setspn -S HTTP/SPHOST.FQDN:PORT <domain>\AppPoolUser
setspn -S HTTP/SPHOST <domain>\AppPoolUser
setspn -S HTTP/SPHOST.FQDN <domain>\AppPoolUser
```

If the port is a default port, such as 80 or 443, omit the commands that include port above. Some of the lines only require a host name while others require a fully qualified host name. If the application pool identity is for a built-in user such as Network Service, then specify the host name as shown below instead of <domain>\AppPoolUser.

```
setspn -S HTTP/SPHOST:PORT <domain>\SPHOST
setspn -S HTTP/SPHOST.FQDN:PORT <domain>\SPHOST
setspn -S HTTP/SPHOST <domain>\SPHOST
setspn -S HTTP/SPHOST.FQDN <domain>\SPHOST
```

If you use SSL, the SPN must refer to HTTP instead of HTTPS.

**After you finish:** [Add Kerberos constrained delegation in Microsoft Active Directory for Microsoft SharePoint.](#)

### Add Kerberos constrained delegation in Microsoft Active Directory for Microsoft SharePoint

There is a limit of 1300 services that can be delegated to one account.

Do not complete this task if you want to configure Kerberos constrained delegation (KCD) for File Share repositories only

**Before you begin:** Verify that you have [Created Service Principal Names.](#)

1. Open **Microsoft Active Directory Users and Computers**.
2. In your domain, click **Users**.
3. Right-click the service account that you want to use to administer Kerberos constrained delegation. Click **Properties**.
4. In the Microsoft Active Directory account properties, on the **Delegation** tab, select the following options:
  - Trust this user for delegation to specified services only
  - Use any authentication protocol
5. Click **Add**.
6. Click **Users or Computers**.
7. In the **Enter the object names to select** field, type one of the following:
  - If the SharePoint web application is running under a domain user account, type the SharePoint Application Pool identity username.
  - If SharePoint web application is running under the Network Service account, type the Microsoft SharePoint server name.
8. Click **OK**.
9. In the **Add Services** dialog box, select the HTTP service that corresponds to the SharePoint web applications running under the account specified in step 7.
10. Click **OK**.
11. Repeat Steps 4–9 for each application pool identity user and each Web Application identified.

**After you finish:** [Add Kerberos constrained delegation for file shares.](#)

### Add Kerberos constrained delegation for file shares

The main difference between sharing files in File Share repositories, compared to sharing apps (for example, Microsoft SharePoint), is that the delegation is to the computer hosting the BEMS instance account and not to the Docs service process user, BEMSAdmin.

**Before you begin:** [Add Kerberos constrained delegation in Microsoft Active Directory for Microsoft SharePoint.](#)

1. Open **Microsoft Active Directory Users and Computers**.
2. In your domain, click **Computers**.
3. Right-click the BEMS computer entry. Click **Properties**.
4. Click the **Delegation** tab.
5. In the Microsoft Active Directory account properties, on the **Delegation** tab, select the following options:
  - **Trust this user for delegation to specified services only**
  - **Use any authentication protocol**
6. Click **Add**, select **Users or Computers**, type in the name of the server whose file share needs access and click **OK**.
7. In the list of services, click **cifs**. Click **OK**.
8. Repeat Step 3 to 6 for each server that has file shares needing access.
9. Restart the BEMS instance. Since Kerberos tokens are cached, restarting the BEMS instance ensures that all delegation changes are received on the machines.

**After you finish:** Restart the

- BEMS instance. Since Kerberos tokens are cached, restarting the BEMS instance ensures that all delegation changes are received on the machines.
- [Turn on Kerberos constrained delegation.](#)

### Turn on Kerberos constrained delegation

When you configure Kerberos constrained delegation (KCD) or resource-based KCD for the Docs service, consider the following:

- Only Windows authentication in Microsoft SharePoint is supported. Forms-based and claims-based authentication are not supported.
- IP addresses are not allowed in the Microsoft SharePoint URLs and File Share paths that you configure in BEMS.

**Before you begin:** [Add Kerberos constrained delegation for file shares.](#)

1. In the **BlackBerry Enterprise Mobility Server Dashboard**, under **BlackBerry Services Configuration**, click **Docs**.
2. Click **Settings**.
3. In the **Kerberos Constrained Delegation** section, select the **Enable Kerberos Constrained Delegation** check box.
4. If your environment requires a separate account to administer KCD, select **Use Separate Service Credentials for Kerberos Constrained Delegation** check box.
5. Enter the credentials for the account that will be used to authenticate to SharePoint for KCD.
6. Click **Save**.
7. Restart the Good Technology Common Services service.

8. On the computer that hosts the Docs service, grant the **Act as part of the operating system** privilege to the BEMS server account (for example, BESAdmin).
  - a) Run the **Local Security Policy** administrative tool.
  - b) In the left pane, expand **Local Policies**.
  - c) Click **User Rights Agreement**.
  - d) Configure the service account for the **Act as part of the operating system** permission.
9. Click **OK**.

## Configuring resource-based Kerberos constrained delegation for the Docs service

You can configure the Docs service to use resource-based Kerberos constrained delegation (KCD) to access resources, such as Microsoft SharePoint servers and File Share servers, and remove the requirement for users to provide their network credentials to access resources within the domain, and between domains and forests. When you configure resource-based KCD for your Docs service, the resource authorizes the service accounts that can delegate against the resource. If you need to enable KCD in your environment, it is recommended you enable resource-based KCD, if your environment meets the minimum requirements. This is also recommended in environments that do not use multiple domains or forests. If your environment does not meet the requirements for resource-based KCD, you can configure [Kerberos constrained delegation \(KCD\)](#).

Configuring the Docs service with resource-based KCD allows users to access resources in the same domain or between domains and forests.

When you configure resource-based Kerberos constrained delegation, you perform the following actions:

Step	Action
1	Configure resource based Kerberos constrained delegation.
2	Turn on Kerberos constrained delegation.

## Configure resource based Kerberos constrained delegation

You can configure the Docs service with resource-based Kerberos constrained delegation (KCD) to allows users to access resources in the same domain and between domains and forests.

### Before you begin:

- Verify that each domain in your environment has one or more Domain Controllers on a computer that is running an operating system that supports BEMS. For more information, see [the BEMS compatibility Matrix](#).
  - Verify that the account that is used to administer Kerberos is a member of the local Administrators group and has the Act as part of the Operating System privilege.
  - If you configure resource-based KCD for Microsoft SharePoint, verify that the Microsoft SharePoint server uses Integrated Windows Authentication – Negotiate (Kerberos) for the authentication provider.
  - Identify the file share servers and Microsoft SharePoint servers that the Docs service requires access to.
1. On the Domain Controller or another computer in your environment, run Windows PowerShell as an administrator and set up delegation.
    - a) To import the ServerManager module, type `Import-Module ServerManager`. Press **Enter**.
    - b) To install the Microsoft Active Directory module for Windows PowerShell and the Microsoft Active Directory Services, type `Add-WindowsFeature RSAT-AD-PowerShell`. Press **Enter**.
    - c) To import the Microsoft Active Directory module, type `import-module activedirectory`. Press **Enter**.

2. In Microsoft Internet Information Services Manager, on the **Application Pools** screen, record the application pool identity for the Microsoft SharePoint servers in your environment.
3. If the Microsoft SharePoint web application is running on a non-default port (the default ports are 80 and 443) or is not running under the network service, create SPNs. Complete one or more of the following tasks:  
If you have multiple Microsoft SharePoint web applications, you must create an SPN for each web application that is available in the scenarios below.

Task	Steps
Create SPNs for a Microsoft SharePoint web application running on a non-default port and as a specific user.	<ol style="list-style-type: none"> <li>a. Type <code>setspn -S HTTP/&lt;Sharepoint server name&gt;:&lt;Sharepoint app port&gt; &lt;Sharepoint domain&gt;\&lt;Sharepoint app user&gt;</code>. Press <b>Enter</b>. <ul style="list-style-type: none"> <li>• Where <i>&lt;Sharepoint server name&gt;</i> is the name of the computer hosting the Microsoft SharePoint web application.</li> <li>• Where <i>&lt;Sharepoint app port&gt;</i> is the port number of the Microsoft SharePoint web application server.</li> <li>• Where <i>&lt;Sharepoint domain&gt;</i> is the domain where the Microsoft SharePoint web application server is located. For example, <i>www.example.com</i>.</li> <li>• Where <i>&lt;Sharepoint app user&gt;</i> is the user or service account that is listed in the Identity column in step 2. If the service is set to run as a user, the identity column displays <i>&lt;web application server name&gt;/&lt;username&gt;</i>. If the service is set to run as a network, you will see Network service.</li> </ul> </li> <li>b. Type <code>setspn -S HTTP/&lt;Sharepoint server FQDN&gt;:&lt;Sharepoint app port&gt; &lt;Sharepoint domain&gt;\&lt;Sharepoint app user&gt;</code>. Press <b>Enter</b>.  Where <i>Sharepoint server FQDN</i> is the FQDN of the computer hosting the Microsoft SharePoint web application server.</li> </ol>
Create SPNs for a Microsoft SharePoint web application running on a default port (80 or 443) and as a specific user.	<ol style="list-style-type: none"> <li>a. Type <code>setspn -S HTTP/&lt;Sharepoint server name&gt; &lt;Sharepoint domain&gt;\&lt;Sharepoint app user&gt;</code>. Press <b>Enter</b>.</li> <li>b. Type <code>setspn -S HTTP/&lt;Sharepoint server FQDN&gt; &lt;Sharepoint domain&gt;\&lt;Sharepoint app user&gt;</code>. Press <b>Enter</b>.</li> </ol>
Create SPNs for a Microsoft SharePoint web application running on a non-default port and under a network service.	<ol style="list-style-type: none"> <li>a. Type <code>setspn -S HTTP/&lt;Sharepoint server name&gt;:&lt;Sharepoint app port&gt; &lt;Sharepoint domain&gt;\&lt;Sharepoint server name&gt;</code>. Press <b>Enter</b>.</li> <li>b. Type <code>setspn -S HTTP/&lt;Sharepoint server FQDN&gt;:&lt;Sharepoint app port&gt; &lt;Sharepoint domain&gt;\&lt;Sharepoint server name&gt;</code>. Press <b>Enter</b>.</li> </ol>

4. Add the delegation to each file share server in your environment.

Task	Steps
Add the delegation for one computer hosting BEMS.	<ol style="list-style-type: none"> <li>a. Type <code>\$gems1 = Get-ADComputer -Identity &lt;GEMS-SERVER-NAME&gt;</code>. Press <b>Enter</b>.</li> <li>b. Type <code>Set-ADComputer &lt;File server name&gt; -PrincipalsAllowedToDelegateToAccount \$gems1</code>. Press <b>Enter</b>.</li> </ol>

Task	Steps
Add the delegation for multiple computers hosting BEMS.	<p>a. Type <code>\$gems1 = Get-ADComputer -Identity &lt;GEMS-SERVER1-NAME&gt;</code>. Press <b>Enter</b>.</p> <p>b. Type <code>\$gems2 = Get-ADComputer -Identity &lt;GEMS-SERVER2-NAME&gt;</code>. Press <b>Enter</b>.</p> <p>For each additional BEMS, increment the <code>\$gems#</code> by one.</p> <p>c. Type <code>Set-ADComputer &lt;File server name&gt; -PrincipalsAllowedToDelegateToAccount \$gems1,\$gems2</code>. Press <b>Enter</b>.</p> <p>For each additional BEMS, add a comma and <code>\$gems#</code> incrementing the # by one.</p>

5. If you configure the delegation for file share servers in a DFS configuration, add delegations to the name server and the file server. For domain-based DFS, this requires adding delegations for all of the Domain Controllers in the domain. Type `Set-ADComputer <DC-SERVER-NAME> -PrincipalsAllowedToDelegateToAccount $gems1`. Press **Enter**.
  - Where `<DC-SERVER-NAME>` is the name of the computer hosting the domain controller.
  - Where `$gems1` is created in step 4 above.
6. Add delegation to the Microsoft SharePoint servers in your environment. Complete one of the following actions:
  - If the application pool identity for Microsoft SharePoint application is Network Service, type `Get-ADComputer <Sharepoint server name> -Properties PrincipalsAllowedToDelegateToAccount`.
  - If the application pool identity for Microsoft SharePoint application is a specific domain user, type `Get-ADUser <Sharepoint app user> -Properties PrincipalsAllowedToDelegateToAccount`.

Where `<Sharepoint app user>` is the user name that is listed in the Identity column in step 2.
7. Press **Enter**.

#### After you finish:

- To verify the delegation is configured correctly, on the Domain controller or another computer in your environment, run Windows PowerShell as an administrator and run one of the following commands:
  - If the delegation was set on the server name, type `Get-ADComputer <server_name> -Properties PrincipalsAllowedToDelegateToAccount`.
  - If the delegation was set on the username, type `Get-ADUser <user_name> -Properties PrincipalsAllowedToDelegateToAccount`.
- To remove the delegation, on the Domain controller or another computer in your environment, run Windows PowerShell as an administrator and run one of the following commands:
  - To remove the delegation from a server, type `Set-ADComputer <server_name> -PrincipalsAllowedToDelegateToAccount $null`.  
If you have multiple file share or Microsoft SharePoint servers in your environment, complete this step for each server.
  - To remove the delegation from a user, type `Set-ADUser <user_name> -PrincipalsAllowedToDelegateToAccount $null`.  
If you use different usernames for the Microsoft SharePoint and file share servers, complete this step for each username.

## Obtain an Entra app ID for the Docs component service

When your environment is configured for Microsoft SharePoint Online, Microsoft OneDrive for Business, or Microsoft Entra ID-IP, you must register the BEMS component services in Entra. You can register one or more of the services in Entra. In this task, the Docs services and Microsoft Entra ID-IP are registered in Entra.

### Before you begin:

- To grant permissions, you must use an account with tenant administrator permissions.
- Verify that you have recorded the Application ID for BlackBerry Work. For more information, see [Obtain an Entra app ID for BlackBerry Work](#).

1. Sign in to [entra.microsoft.com](https://entra.microsoft.com).
2. In the left column, click **Applications > App registrations**.
3. Click **New registration**.
4. In the **Name** field, enter a name for the app. For example, EntraAppIDforBEMS.
5. Select a supported account type.
6. In the **Redirect URI** drop-down list, select **Web** and enter `https://localhost:8443`.
7. Click **Register**.
8. Record the **Application (client) ID**.

This is used as the **BEMS Service Azure Application ID** value in the BlackBerry UEM Cloud management console. This is used as the **BEMS Service Azure Application ID** value for the Docs > Settings service in the on-premises BEMS dashboard.

9. In the **Manage** section, click **API permissions**.

### 10. Click **Add a permission**.

11. Complete one or more of the following tasks:

Service	Permissions
If you configure BEMS-Docs to use Microsoft SharePoint Online or Microsoft OneDrive for Business	<ol style="list-style-type: none"><li>a. Search for and click <b>SharePoint</b>.</li><li>b. Set the following permissions:<ul style="list-style-type: none"><li>• In application permissions, clear all of the permissions.<ol style="list-style-type: none"><li>1. Click <b>Application permissions</b>.</li><li>2. Click <b>expand all</b>. Make sure that all options are cleared.</li></ol></li><li>• In <b>Delegated permissions</b>, click <b>AllSites</b> and select the <b>AllSites.Manage</b> checkbox to grant <b>Read and write items and lists in all site collections</b>. Verify that all other options are cleared.</li></ul></li><li>c. Click <b>Add permissions</b>.</li></ol>



Service	Permissions
If you use Microsoft Entra ID-IP	<ol style="list-style-type: none"> <li>a. Click <b>Microsoft Graph</b>. If Microsoft Graph is not listed, add Microsoft Graph.</li> <li>b. Set the following permissions: <ul style="list-style-type: none"> <li>• In application permissions, select the <b>Read directory data</b> checkbox (<b>Directory &gt; Directory.Read.All</b>).</li> <li>• In delegated permissions, select the <b>Read directory data</b> checkbox (<b>Directory &gt; Directory.Read.All</b>).</li> </ul> </li> <li>c. Click <b>Update permissions</b>.</li> <li>d. <b>Add a permission</b>.</li> <li>e. In the <b>Select an API</b> section, click <b>Azure Rights Management Services</b>. Set the following permissions: <ul style="list-style-type: none"> <li>• In application permissions, select all of the permissions. <ol style="list-style-type: none"> <li>1. Click <b>Application permissions</b>.</li> <li>2. Make sure that all Content options are selected.</li> </ol> </li> <li>• In delegated permissions, select the <b>user_impersonation</b> checkbox.</li> </ul> </li> <li>f. Click <b>Add permissions</b>.</li> <li>g. Click <b>Add a permission</b>.</li> <li>h. In the <b>Select an API</b> section, click <b>APIs my organization uses</b>.</li> <li>i. Search for and click <b>Microsoft Information Protection Sync Service</b>. In delegated permissions, select the <b>Read all unified policies a user has access to</b> checkbox (<b>UnifiedPolicy &gt; UnifiedPolicy.User.Read</b>).</li> <li>j. Click <b>Add permissions</b>.</li> </ol>

12. Click **Grant admin consent**. Click **Yes**.

This step requires tenant administrator privileges.

13. To allow autodiscovery to function as expected, set the authentication permissions. Complete the following steps:

- a) In the **Manage** section, click **Authentication**.
- b) Under the **Allow public client flows** section, select **Yes** to **Enable the following mobile and desktop flows**.
- c) Click **Save**.

14. Define the scope and trust for this API. In the **Manage** section, click **Expose an API**. Complete the following tasks.

Task	Steps
Add a scope	<p>The scope restricts access to data and functionality protected by the API.</p> <ol style="list-style-type: none"> <li>a. Click <b>Add a scope</b>.</li> <li>b. Click <b>Save and continue</b>.</li> <li>c. Complete the following fields and settings: <ul style="list-style-type: none"> <li>• Scope name: Provide a unique name for the scope.</li> <li>• Who can consent: Click <b>Admins and user</b>.</li> <li>• Admin consent display name: Enter a descriptive name.</li> <li>• Admin consent description: Enter a description for the scope.</li> <li>• State: Click <b>Enabled</b>. By default, the state is enabled.</li> </ul> </li> <li>d. Click <b>Add Scope</b>.</li> </ol>

Task	Steps
Add a client application	<p>Authorizing a client application indicates that the API trusts the application and users shouldn't be prompted for consent.</p> <ol style="list-style-type: none"> <li>Click <b>Add a client application</b>.</li> <li>In the <b>Client ID</b> field, enter the BlackBerry Work Application ID that you recorded when you <a href="#">obtained the Entra app ID for BlackBerry Work</a>.</li> <li>Select the <b>Authorized scopes</b> checkbox to specify the token type that is returned by the service.</li> <li>Click <b>Add application</b>.</li> </ol>

15. In the **Manage** section, click **Certificates & secrets** and do the following:

- Click **New client secret**.
- In the **Description** field, enter a key description up to a maximum of 16 characters including spaces.
- Set an expiration date.
- Click **Add**.
- Copy the key **Value**.

The Value is available only when you create it. You cannot access it after you leave the page. If you do not record the value, you must create a new one. This is used as the **BEMS Service Azure Application Key** in the dashboard and BlackBerry UEM management console.

## Storage services

BEMS is installed with support for the following storage service providers.

You can add additional storage services to meet your organization's needs. The following table lists the storage providers that are supported by default and when they should be used.

Storage provider	Description
Box	By default, BEMS allows corporate box.com cloud storage users to view the Box repositories using BlackBerry Work Docs. If you delete the predefined Box storage, the hidden authentication parameters are also removed. For more information about determining if you are using a non-default Box storage and how to re-add the default Box storage, see <a href="#">KB 48469</a> .
CMIS	You can add storage services that utilize the Content Management Interoperability Services (CMIS) protocol, an open standard that allows different content management systems to inter-operate over the Internet. Note that only Microsoft Active Directory users are supported for CMIS. This requires that the content management system is connected to Microsoft Active Directory for user authentication for Docs to support it.
FileShare	This storage provider allows BEMS to communicate with the FileShare server. If your environment is configured for a specific version of SMB or CIFS protocol to access a File Share, BEMS must be installed on a compatible Windows operating system.
SharePoint	If your environment uses a supported version of Microsoft SharePoint or Microsoft SharePoint Online, this storage provider allows BEMS to determine the appropriate storage provider to use to communicate with your version of SharePoint. For more information about supported versions of Microsoft SharePoint, see the <a href="#">BEMS Compatibility Matrix</a> .

## Authentication providers

The following table lists the available authentication providers and the storage provider that each can be used for. For instructions on how to add a storage service, see [Add a storage service](#) and [Enable modern authentication for Microsoft SharePoint Online](#)

Authentication Provider	Storage provider
Windows - Explicit Credentials	FileShare, SharePoint
Windows - Kerberos Constrained Delegation	FileShare, SharePoint
OAuth2	Box
Modern	SharePoint Online

## Add a storage service

BEMS is installed with [support for a number of storage service providers](#). Complete this task when you need to add an additional storage service to meet your organization's needs.

1. In the **BlackBerry Enterprise Mobility Server Dashboard**, under **BlackBerry Services Configuration**, click **Docs**.
2. Click **Storages**.
3. Click **New Storage**.
4. In the **Storage name** field, type a name for the storage.
5. In the **Storage provider** drop-down list, select a service provider. For more information, see [Storage services](#).
6. In the **Authentication Provider** drop-down list, select an authentication provider. For information, see [Authentication providers](#).
7. To make the storage available on user devices, select the **Enable Storage** check box.

It may take up to an hour for storage changes to take effect on user devices. It may take up to five minutes for the changes to take effect on the server. Enabling and disabling storage providers affects what storage resources are visible at any given time for users, but has no such impact on the server. If this option is not selected, users can't access the fileshare and receive the following error message on the device: "Data sources could not be retrieved. Unable to connect to the server".

**After you finish:** Add repositories in the storage provider. For more information, see [Managing Repositories in an on-premises environment](#).

## Microsoft SharePoint Online authentication setup

The following instructions do not apply when you configure Microsoft SharePoint Online using Modern Authentication. For Kerberos constrained delegation (KCD), which allows for single sign-on credential-less access to network resources from devices, only Active Directory Federation Service (ADFS) authentication to Microsoft SharePoint Online is supported.

**Note:** Configure delegation using the BEMS service account (for example, BEMSAdmin). When adding Kerberos delegation constraints for Docs service users, add the ADFS server HTTP service. Do not add Microsoft SharePoint Online servers for delegation here.

For non-KCD configurations, where users enter their credentials on the device, both DirSync with Password Hash and ADFS authentication mechanisms to Microsoft SharePoint Online are supported. No extra authentication-related steps are required to use this configuration.

ADFS	Description
ADFS version and location	Refers to the version of Microsoft Windows that is installed in your environment to verify which version of ADFS is required. The ADFS server is automatically identified by the Docs service based on the Microsoft SharePoint Online location and does not need to be specified.
ADFS HTTPS certificate	<p>If your ADFS server uses a self-signed certificate for HTTPS communication, the certificate must be added as a trusted CA on the computer hosting BEMS.</p> <p>To add the certificate, navigate to the Microsoft IIS Manager on the computer hosting ADFS, then go to Server Certificates and export the certificate to a file. On the computer hosting BEMS, import this certificate into the trusted CA list.</p> <p>Once you deploy Microsoft SharePoint Online, you're ready to configure the Docs service for your Microsoft SharePoint Online users.</p>

### Enable the use of an alternate email address to authenticate to the Docs service

You can configure BEMS to allow users to authenticate to Microsoft SharePoint Online with an email address that is different from the email address that was used to install and activate BlackBerry Work. Complete this task only if your environment is configured to use one of the following:

- If your environment is configured to use Windows authentication, you can configure BEMS to use the UserPrincipalName (UPN), email address, or any other Active Directory attribute to authenticate to Microsoft SharePoint Online. By default, the UserPrincipalName attribute is used.
- If your environment uses modern authentication, you can configure BEMS to disable validating the email address when users authenticate to Microsoft SharePoint Online or the environment uses Entra-IP.

1. Sign in to the computer that is running the Docs service.
2. In a browser, navigate to the BEMS Karaf Console Configuration web site at <https://localhost:8443/system/console/configMgr> and login as administrator with the appropriate Microsoft Active Directory credentials.
3. On the menu, click **Main > Gogo**.
4. Type one of the following commands:

Task	Attribute	Description
Authenticate to Microsoft SharePoint Online using mail	docs:config SAMLUsernameAttribute mail	<p>Allows users to use their email address to authenticate to Microsoft SharePoint Online instead of the user's userPrincipalName.</p> <p>To use the users' UPN again to authenticate, type docs:config SAMLUsernameAttribute UserPrincipalName</p>

Task	Attribute	Description
Disable user validation when authenticating to one of the following: <ul style="list-style-type: none"> <li>• Microsoft SharePoint Online configured for modern authentication</li> <li>• Entra-IP</li> </ul>	docs:config modernauth.uservalidatio 1	Disables validation of the user's email address.

## Managing Repositories in an on-premises environment

The Docs service provides your end users with access to stored enterprise data from their mobile devices. A Docs repository (also called a "share") lives on an enterprise server containing files shared by authorized users.

Before you configure your repositories, configure the [Docs Security Settings](#). After the repositories are configured, entitle your users so that they can access the repositories you add and define from their devices.

BEMS supports the following repository storage providers:

Storage repository	Description
FileShare	A secure directory on an enterprise file server containing shared files and sub-directories which can be remotely accessed.
SharePoint	A secure web server containing shared files which are accessed using the Internet.
SharePoint Online	If your environment is configured for Microsoft OneDrive for Business, the SharePoint Online storage repository is used.
Box	A secure cloud storage account furnished by box.com containing shared files which can be accessed using the Internet.
CMIS-based	Content Management Interoperability Services (CMIS) is an open standard that allows different content management systems to inter-operate over the Internet.

A repository is further categorized in the Docs service by who added and defined it:

Storage repository	Description
Admin-defined	Storage provider sites added and maintained by BEMS administrators to which individual users and user groups are granted access.
User-defined	Sites added by individual end users from their mobile devices to which you, as the BEMS administrator, may rescind and reinstate mobile-based access in accordance with your enterprise IT acceptable-use policies.

## Configuring repositories in an on-premises environment

The Repository configuration page has the following three tabs that you can configure:

Tabs	Description
Admin defined	Allows you to create and manage repositories, add and remove users and user groups, and assign users and user groups file access and use permissions.
User defined	Allows you to add and remove users and user groups, enable and disable user and user groups the ability to create user-defined repositories, and to grant and rescind permissions to perform a range of file-related actions on user-defined repositories.
Users	Allows you to search for a user in a Microsoft Active Directory domain to view the repositories permitted by path or override, and who defined the share (for example, administrator or user).

### Steps to define admin-defined repositories and repository lists

Shares are document repositories for a particular storage provider. You can further organize your administrator-defined shares into lists. A named (defined) share, however, can only belong to one list. This is enforced to help you avoid unwanted or unintended duplication.

When you define repositories and lists, you perform the following actions:

Step	Action
1	Define a repository.
2	Define a repository list.
3	Add user and user group access permissions.

### Admin-defined user access permissions

Access permissions are defined for a single repository or inherited from an existing list of repositories. Repository lists are not supported by BlackBerry UEM Cloud. Permissions can be selectively granted to existing Microsoft Active Directory domain users and user groups. At least one user or user group must be added to the repository definition to configure access permissions.

The following table lists the permissions that are provided by default when you add users and groups to the Admin-defined repositories.

Permission	Permissions Attributes	Default setting
List (Browse)	View and browse repository content (for example, subfolders and files) in a displayed list, and sort lists by Name, Date, Size, or Kind.	Enabled
Delete Files	Remove files from the repository.	Enabled

Permission	Permissions Attributes	Default setting
Read (Download)	Download repository files to the user's device and open them to read.  When you enable this permission, BlackBerry recommends that users do not download more than 50 files at a time, or the downloads might not function as expected.	Enabled
Write (Upload)	Upload files (new/modified) from user's device to the repository for storage.	Enabled
Cache (Offline Files)	Temporarily store a cache of repository files on the device for offline access.  You can designate files and folders to synchronize to users' BlackBerry Work Docs app Offline folder.	Enabled
Open In	Open a file in a format-compatible app on the device.	Enabled
Create Folder	Add new folders to the repository.	Enabled
Copy/Paste	Copy repository file content and paste it into a different file or app.	Enabled
Check In/Check Out	When a file is checked out, the user can edit, close, reopen, and work with the file offline. Other users cannot change the file or see changes until it is checked back in.	Enabled (SharePoint only)
Generate Shared Link	Users can generate a link to a file and folder and send the link to recipients.  The Generate Shared Link requires an updated BlackBerry Work app.	Enabled (Box only)

## Define a repository

Microsoft Active Directory users and groups must be added to a repository definition or a list definition before access permissions can be configured. Users and groups added automatically receive the default access permissions.

**Before you begin:** For users to access Microsoft SharePoint repositories on their devices, verify that they have the "Read" permission level and the "Browse Directories" permission assigned.

1. On the **BlackBerry Enterprise Mobility Server Dashboard**, under **BlackBerry Services Configuration**, click **Docs**.
2. Click **Repositories**.
3. Click the **Admin defined** tab.
4. Click **New Repository**.
5. In the **Display Name** field, type the name of the repository that will be displayed to users granted mobile access to the repository.

The repository name must be unique and can contain spaces. The following special characters cannot be used due to third-party limitations:

- Microsoft SharePoint 2016, and 2019: ~ " # % & \* : < > ? / \ { | }
- File Share: \ / : \* ? " < > |

- Box: \ / |

6. In the **Storage** drop-down list, select a storage provider.

If you select **SharePoint** or **SharePoint Online**, and the share is running SharePoint 2016 or later, select the **Add sites followed by users on this site** check box to make this feature available to users of this share. This setting applies for personal (my) SharePoint or OneDrive for Business sites only.

If your environment is configured for Microsoft OneDrive for Business, select the **SharePoint Online** storage provider.

7. In the **Path** field, specify the path to the share. Complete one of the following tasks based on the storage provider that you selected.

Storage type	Task
Box	Enter a fully qualified URL with or without Microsoft Active Directory attributes.
FileShare	The Path can include Microsoft Active Directory attributes. For example, \\fileshare1\<sAMAccountName> or <homeDirectory>.
SharePoint SharePoint Online Microsoft OneDrive for Business	<p>Enter a fully qualified URL with or without Microsoft Active Directory attributes.</p> <p>To add "my" or personal SharePoint sites, specify the URL for the "my" site. For example,</p> <ul style="list-style-type: none"> <li>• If your environment uses SharePoint and SharePoint Online, <i>https://&lt;Microsoft SharePoint server&gt;/my</i>.</li> <li>• If your environment uses Microsoft OneDrive for Business, <i>https://&lt;your O365 domain&gt;-my.sharepoint.com/personal/admin_&lt;domain&gt;_onmicrosoft_com/_layouts/15/onedrive.aspx</i></li> </ul> <p>If the personal site includes usernames or other Microsoft Active Directory attributes, enter the path including these attributes. For example, <i>https://sharepoint.example.com/my/&lt;sAMAccountName&gt;</i>.</p> <p>Optionally, to automatically add followed sites, complete the following steps:</p> <ol style="list-style-type: none"> <li>a. Add a repository for the "my" or personal SharePoint site.</li> <li>b. Select the <b>Add sites followed by users on this site</b> for the repository.</li> <li>c. On the <b>User-defined</b> tab, enable a user-defined repository permission. Make sure that you select the <b>Enable 'User Defined Shares'</b> and <b>Automatically add sites followed by users</b> check boxes. For more information, see <a href="#">Enable user-defined repository permissions</a>.</li> </ol>



Storage type	Task
CMIS-based	<p>For storage providers using CMIS support that you have added to BEMS, both AtomPub and Web Services web addresses are supported. A repository ID may be optionally specified and a path inside the repository may also be optionally specified.</p> <p>If no repository ID is specified, then all repositories that a user has access to are listed to the user. If no path is specified, then the listing starts at the repository root.</p> <p>Following is the format of the paths for BEMS Docs repositories for accessing CMIS repositories:</p> <ul style="list-style-type: none"> <li>• <code>&lt;ATOM-PUB-URL&gt;?RepositoryId=&lt;REPOSITORY-ID&gt;&amp;RelativePath=&lt;REPOSITORY-PATH&gt;</code></li> <li>• <code>&lt;WEB-SERVICES-URL&gt;?RepositoryId=&lt;REPOSITORY-ID&gt;&amp;RelativePath=&lt;REPOSITORYPATH&gt;&amp;BindingType=WebService</code> <ul style="list-style-type: none"> <li>• Where <code>&lt;ATOM-PUB-URL&gt;</code> and <code>&lt;WEB-SERVICES-URL&gt;</code> is specific to the CMIS vendor. Contact your CMIS vendor for more information.</li> <li>• Where <code>&lt;REPOSITORY-ID&gt;</code> is the CMIS repository ID (optional).</li> <li>• Where <code>&lt;REPOSITORY-PATH&gt;</code> is the path inside the CMIS repository (optional).</li> </ul> </li> </ul>

8. Optionally, in the **List** drop-down list, select an existing list that you want this repository to belong to. If no list is defined, you can create one later or leave this field blank.

If a List is selected, select the **Enable inheriting of access control of repository list** check box to apply the Access Permissions of the List to the repository. If the check box is not selected, you must define specific access permissions for this share (repository).

9. If your organization uses BlackBerry Workspaces, select **Manage access through WatchDox** to manage access permissions from the BlackBerry Workspaces server. For more information about the Unified Content Connector, contact BlackBerry Technical Support Services.

10. In the **Access permissions** section, click **Add Users/Groups**.

11. In the **Search In** field, enter a new domain or keep the default domain.

12. In the **Search for Users in Active Directory** field, type a full or partial search string. Click **Search**.

13. In the search results, select one or more entries.

14. Optionally, select the **Use Different Credentials** and enter a username and password to configure a different username and password for accessing this repository by these users.

15. Click **Add**.

16. Optionally, specify files and folders to synchronize to users' Offline folder in the BlackBerry Work Docs app.

- Click **Add**.
- Navigate to the file or folder that you want to synchronize to users' offline folder.
- Click **Add**.
- Repeat steps a to c for each file and folder that you want to synchronize.

17. Click **Test** and enter the test user login credentials to validate the repository information on behalf of the user, including the repository path, access to the user account, and the offline files and folders path. If the test fails, the appropriate message is displayed (for example, "No user or user group assigned permission to access the repository" or "Could not validate path(s) `<file/folder path>`"). Resolve the issue that is specified and test again.

18. Click **Save**.

**After you finish:**

- To remove the offline files and folders, select the check box beside the files or folders to delete. Click **Delete**.
- To edit the repository, on the **Admin defined** tab, click the repository that you want to edit, and make the required changes.

**Define a repository list**

Use Lists to assign users to multiple repositories and to organize your repositories by common characteristics. This allows you to batch-configure user access permissions. Included repositories can inherit the configured user access permissions of the list or maintain permissions independent of the list. Repository lists are not supported by BlackBerry UEM Cloud.

Microsoft Active Directory users and groups must be added to a repository definition or a list definition before access permissions can be configured. Users and groups added automatically receive the default access permissions.

1. In the **BlackBerry Enterprise Mobility Server Dashboard**, under **BlackBerry Services Configuration**, click **Docs**.
2. Click **Repositories**.
3. Click the **Admin Defined** tab.
4. Click **New List**.
5. In the **Display Name**, enter the name that will be displayed to authorized users on their mobile devices.
6. In the **Select Repositories to include** field, select the defined repositories to include.
7. If your organization uses BlackBerry Workspaces, select **Manage access through WatchDox** to manage access permissions from the BlackBerry Workspaces server. For more information about the Unified Content Connector, contact BlackBerry Technical Support Services.
8. Click **Save**.

**After you finish:** If you don't use a BlackBerry Workspaces server in your environment, complete the following tasks:

1. Add new users and groups to the list definition.
2. Grant user access permissions.

**Add users and user groups to repositories and list definitions**

You must add Microsoft Active Directory users and groups to a repository definition or a list definition before you can configure access permissions. Users and groups that are added automatically receive the default access permissions.

1. In the **BlackBerry Enterprise Mobility Server Dashboard**, under **BlackBerry Services Configuration**, click **Docs**.
2. Click **Repositories**.
3. On the **Repositories Configuration** page, click the **Admin defined** tab.
4. Click a repository or list.
5. In the **Access permissions**, click **Add users/groups**.
6. In the **Search In** field, enter a new domain or keep the default domain.
7. Select **Users** or **Groups**.
8. In the **Search for Users in Active Directory** field, type a full or partial search string. Click **Search**.
9. In the search results, select one or more entries.
10. Optionally, select the **Use Different Credentials** checkbox and enter a username and password to configure a different username and password for accessing this repository by these users.
11. Click **Add**.

12. Click **Save**.

**After you finish:** To edit the user and user groups access permissions, select or clear the permission for each user or group.


## Enable user-defined repository permissions

You can allow users to create their own links to existing document repositories using the BlackBerry Work app or Docs Self-Service web console.

**Before you begin:** For users to access their Microsoft SharePoint repositories on their devices, verify that they have the Read permission level and the Browse Directories permission assigned.

1. In the **BlackBerry Enterprise Mobility Server Dashboard**, under **BlackBerry Services Configuration**, click **Docs**.
2. Click **Repositories**.
3. Click the **User Defined** tab.
4. Select the **Enable 'User Defined Shares'** checkbox to allow mobile users to define their own data sources.
5. Optionally, select the **Automatically add sites followed by users** check box for authorized Microsoft SharePoint repositories with the required MySite plugin enabled.  
To automatically add followed sites, complete the following steps:
  - a. On the **Admin-defined** tab, add a repository for the "my" or personal SharePoint site. For more information, see [Define a repository](#).
  - b. Select the **Add sites followed by users on this site** for the repository.
  - c. On the **User-defined** tab, verify that you select the **Enable user-defined shares** and **Automatically add sites followed by users** check boxes.
6. In the **Storage** section, select one or more storage services.  
If you do not select at least one storage option, the user-defined option is disabled.
7. In the **Access Permissions** section, click **Add users/groups**.
8. In the **Search In** field, enter a new domain or keep the default domain.
9. Select **Users** or **Groups**.
10. In the **Search for Users in Active Directory** field, type a full or partial search string. Click **Search**.
11. In the search results, select one or more entries.
12. Optionally, select the **Use Different Credentials** and enter a username and password to configure a different username and password for accessing this repository by these users.
13. Click **Add**. The users and groups added automatically receive the default access permissions.
14. Select **Add New Repositories** to allow users to create their own links to existing document repositories using the BlackBerry Work app or Docs Self-Service web console. For more information, see [User-defined access permissions](#).
15. Click **Save**.

**After you finish:**

- To change the user or group access permissions, in the **Access Permissions** section, beside the user or group, select or clear the permission check box that you want to change.
- To remove a user or group, click  beside the user or group.

## User-defined access permissions

Permissions can be selectively granted to existing Microsoft Active Directory domain users and user groups. The most restrictive permissions (admin-defined or user-defined) are applied.

The following table lists the permissions that are provided by default when you add users and groups to the User-defined repositories.

Permission	Permissions Attributes	Default setting
List (Browse)	View and browse repository content (for example, subfolders and files) in a displayed list, and sort lists by Name, Date, Size, or Kind.	Enabled
Delete Files	Remove files from the repository.	Enabled
Read (Download)	Download repository files to the user's device and open them to read.	Enabled
Write (Upload)	Upload files (new/modified) from user's device to the repository for storage.	Enabled
Cache (Offline Files)	Temporarily store a cache of repository files on the device for offline access.  You can designate files and folders to synchronize to users' BlackBerry Work Docs app Offline folder.	Enabled
Open In	Open a file in a format-compatible app on the device.	Enabled
Create Folder	Add new folders to the repository.	Enabled
Copy/Paste	Copy repository file content and paste it into a different file or app.	Enabled
Check In/Check Out	When a file is checked out, the user can edit, close, reopen, and work with the file offline. Other users cannot change the file or see changes until it is checked back in.	Enabled (SharePoint only)
Add New Repositories	Permits new repositories to be added from the user's mobile device.	Disabled
Generate Shared Link	Users can generate a link to a file and folder and send the link to recipients.  The Generate Shared Link requires an updated BlackBerry Work app.	Enabled (Box only)

### View user repository rights

In some scenarios, you may need to search for a particular user to review which repositories are configured for their access, as well as the specific permissions granted. For example, when a user is one member of a Microsoft Active Directory group configured for repositories and is not listed individually in your admin-defined or user-defined repository configurations, and you want to consider making specific changes to the user's access permissions.

1. In the **BlackBerry Enterprise Mobility Server Dashboard**, under **BlackBerry Services Configuration**, click **Docs**.
2. Click **Repositories**.

3. Click **Users**.
4. In the **Search Users** field, begin typing the user's Microsoft Active Directory account name. If you don't see the user you want, extend or narrow the search string or click **Switch Domains** to search a different Microsoft Active Directory domain. Users with accounts on BlackBerry UEM are returned in queries, but do not display any repository information.
5. Click the user name. The **Defined by** column specifies if the repository is admin-defined or user-defined.
6. Click the name of the repository or on the row to view the user's access permissions. To modify the access permissions, select or clear the permission for the user.
7. Optionally, if the repository is admin-defined, in the **Override Path for this user** field, enter an override path.
8. Optionally, if the repository is user-defined, in the **Repository name** field, enter a new repository name.

#### **Enable users to access Box repository using a custom Box email address**

On the Home screen of the computer hosting BEMS, complete one of the following actions:

Attributes	Task
The Box email address matches one of the following Microsoft Active Directory attributes: <ul style="list-style-type: none"><li>• mail</li><li>• userPrincipalName</li><li>• proxyAddresses</li><li>• targetAddress</li></ul>	No action is required.

Attributes	Task
<p>The Box email address matches a Microsoft Active Directory attribute other than the attributes listed above.</p>	<p>Set the config value, <b>LDAPUserCheckAttribute</b>, to specify the Microsoft Active Directory attribute that contains the custom Box email address.</p> <ol style="list-style-type: none"> <li>On the computer hosting BEMS, open a command prompt and navigate to the <b>client.bat</b> file. By default, the file is located at <code>&lt;drive&gt;:\Program Files\BlackBerry\BlackBerry Enterprise Mobility Server\Good Server Distribution\gems-quickstart-&lt;version&gt;\bin</code>.</li> <li>Type <code>client.bat -u domain name\username</code>. Press <b>Enter</b>. <ul style="list-style-type: none"> <li>Where <i>domain name</i> is the name of the domain BEMS is located in.</li> <li>Where <i>username</i> is the name of an administrator account on BEMS.</li> </ul> </li> <li>Type the password for the BEMS user account. Press <b>Enter</b>.</li> <li>Set the LDAPUserCheckAttribute. Type <code>docs:config Config-Name Config-Value</code>. <ul style="list-style-type: none"> <li>Where <i>Config-Name</i> is LDAPUserCheckAttribute.</li> <li>Where <i>Config-Value</i> is the name of the Microsoft Active Directory attribute you want to add. For example, <code>BoxLogin</code>.</li> </ul> </li> <li>Optionally, confirm the <i>Config-Value</i> is set. Type <code>docs:config Config-Name</code></li> </ol>

Attributes	Task
The Box email address does not match any Microsoft Active Directory attribute.	<p>Complete one of the following tasks:</p> <ul style="list-style-type: none"> <li>• Add an attribute to contain the Box email address and use the previous configuration. See the instructions above.</li> <li>• Enable the <code>EnablePersonalBoxAccess</code> config value to allow users to use personal Box email addresses without adding an attribute.</li> </ul> <p><b>Note:</b> If you use this method to allow users to use custom Box email addresses to access Box, users can copy documents from your organization's network to their private Box accounts.</p> <ol style="list-style-type: none"> <li>a. On the computer hosting BEMS, open a command prompt and navigate to the <b>client.bat</b> file. By default, the file is located at <code>&lt;drive&gt;:\Program Files\BlackBerry\BlackBerry Enterprise Mobility Server\Good Server Distribution\gems-quickstart-&lt;version&gt;\bin</code>.</li> <li>b. Type <code>client.bat -u domain name\username</code>. Press <b>Enter</b>.</li> <li>c. Type the password for the BEMS administrator account. Press <b>Enter</b>.</li> <li>d. Set the <b>EnablePersonalBoxAccess</b> to 1 to enable the attribute. Type <code>docs:config EnablePersonalBoxAccess 1</code>.</li> <li>e. Optionally, confirm <b>EnablePersonalBoxAccess</b> is enabled. Type <code>docs:config EnablePersonalBoxAccess</code>.</li> </ol>

## Configuring Docs for Rights Management Services

Active Directory Rights Management Services (AD RMS) and Entra-IP RMS from Microsoft allow documents to be protected against access by unauthorized people by storing permissions to the documents in the document file itself. Access restrictions can be enforced wherever the document resides or is copied or forwarded to. For documents to be protected with AD RMS or Entra-IP RMS, the app that the document is associated with must be RMS aware. For more information, visit [Comparing Azure Information Protection and AD RMS](#).

**Note:** BEMS doesn't support both the AD RMS and Entra-IP RMS in the same environment.

Support for RMS protected documents is provided through two methods:

- In Docs and BlackBerry Work, support for RMS protected documents is provided through the Microsoft Office Web Apps and Office Online Server with viewing and editing enabled through the BlackBerry Access browser. Note that while BlackBerry Access browser is a BlackBerry Dynamics app with all the secure features it provides, it has only partial support for RMS features.
- In BlackBerry Work, support for RMS protected documents is provided directly in and through BlackBerry Work.

The following table compares the features of RMS protected documents in BlackBerry Work and through BlackBerry Access. These features require a client that is RMS aware.

	<b>RMS protected documents directly in BlackBerry Work</b>	<b>RMS protected documents through BlackBerry Access</b>
Features	<ul style="list-style-type: none"> <li>• View protected documents directly in BlackBerry Work.</li> <li>• Protect unprotected documents in BlackBerry Work.</li> <li>• Change permissions for documents in BlackBerry Work.</li> <li>• Upload a new file and save it as protected.</li> </ul>	View and edit protected documents in Docs and BlackBerry Work through the BlackBerry Access browser.
Security	Users can save what is on screen as a web clip and this screenshot file can be shared with other BlackBerry Dynamics apps. Mitigation is to disable web clips in the BlackBerry Access policy.	<ul style="list-style-type: none"> <li>• Share the Microsoft Office Web Apps or Office Online Server URL that is used to render the document viewing or editing with other BlackBerry Dynamics apps. The URL expires in thirty minutes but during this time, other BlackBerry Dynamics apps might be able to access it without any authentication. For example, if it is shared with BlackBerry Work, the URL can be emailed to others. If it is shared with a BlackBerry Dynamics app that allows printing, then the page that is rendered might be printed. Mitigation would be to enable user agent in the BlackBerry Access policy and then use it to create filtering rules in the Microsoft Office Web Apps or Office OnlineServer so that only BlackBerry Access is able to access the URL. The Microsoft IIS URL Rewrite extension can be used to create the rules.</li> <li>• Users can save what is on screen as a web clip and this screenshot file can be shared with other BlackBerry Dynamics apps. Mitigation is to disable web clips in BlackBerry Access policy.</li> <li>• When editing a document, by default, copy and paste of content would be possible by default policies only within the BlackBerry Dynamics secure container environment. Ensure that the protection provided is adequate given these limitations and satisfies your RMS protection requirements before enabling this support.</li> </ul>

### **Rights Management Services restrictions**

The following Rights Management Services (RMS) restrictions are respected by the Docs service:

- View right is required to view documents.
- Edit right is required to edit documents.
- Print or Export rights are required to convert documents to PDF.



- If a user is the owner of a document and the "Grant owner full control" right is set, then viewing, editing, and converting to PDF is allowed.
- If the current date is beyond the content expiry date, then no access to the document is allowed except when the user is owner and the "Grant owner full control" right is set.
- Revocation of rights is respected.
- Use licenses are acquired on every use of the document.
- Both template-based and custom protection on documents are honored.

### Docs deployment for Active Directory Rights Management Services support

1. On the computer that hosts BEMS, install the Rights Management Services Client 2.1. To download the client, visit [www.microsoft.com/downloads](http://www.microsoft.com/downloads) and search for ID=38396.
2. If using self-signed certificates in AD RMS server, add the SSL certificate for `https://<AD RMS server URL>` to the trusted CA list.
3. In a browser, add `https://<AD RMS server URL>` to the Local Intranet site list.
4. Install the Docs service with the Good Technology Common Services service running as a domain user. If you installed BEMS using the service account, you can change the BEMS service account. For more information, see [KB 58463](#).
5. If a super users group is not already configured in AD RMS server, configure one. Then add BEMS process user (Good Technology Common Services service user) to this AD RMS super users group.
6. On the AD RMS server, find the file `%systemdrive%\Inetpub\wwwroot\_wmcs\Certification\ServerCertification.asmx` and add Read and Read & Execute permissions for the following:
  - the AD RMS Service Group.  
The AD RMS Service Group is a local group and not a domain group.
  - the computer account for each of the BEMS servers.
  - The Good Technology Common Services service user.

### Steps to deploy Entra IP Rights Management Services support for the Docs service

When you configure Entra-IP RMS support for the Docs service, you complete the following steps:

Step	Action
1	On the computer that hosts BEMS, install the Rights Management Services Client 2.1. To download the client, visit <a href="http://www.microsoft.com/downloads">www.microsoft.com/downloads</a> and search for ID=38396.
2	Obtain an Entra app ID for the Docs component service.
3	If necessary, migrate any labels that you need in the environment. The Docs service only supports migrated unified labels. For more information, see the Microsoft resource <a href="#">How to migrate Azure Information Protection labels to unified sensitivity labels</a> .
4	Convert protections templates to labels. For more information, see the Microsoft resource <a href="#">Extend sensitivity labeling on Windows</a> .

Step	Action
5	Configure the Docs network and security settings.

## Using the Docs Self-Service web console

Similar to the method for adding user-defined repositories on and from the device (see "Add a new data source" in the respective [BlackBerry Work User Guide](#) for iOS or Android), authorized users can access the Docs Self-Service web console from a browser on their office workstation or laptop to add user-defined File Share, Box, and SharePoint repositories. The self-service console is included in your BEMS installation and automatically configured with the Docs service in the BEMS Dashboard.

The web address to access the Docs Self-Service web console can be one of the following web addresses. Contact your BEMS or BlackBerry Work administrator for the specific web address in your environment.


- If you configured single sign-on, navigate to `https://<bems_fqdn>:<port>/docsconsole-sso`
- If you require a username and password, navigate to `https://<bems_fqdn>:<port>/docsconsole`

For more information, see [KB 57150](#).

## Add a repository using the Docs Self-Service web console

**Before you begin:** You must be authorized to access the Docs Self-Service web console. For instructions on authorizing access to the Docs Self-Service web console, see [Enable user-defined repository permissions](#). Users must have the Add New Repositories permission to add a repository from the browser.

1. In a browser, navigate to the Docs Self-Service console at one of the following web addresses:
  - If your environment is configured for single sign-on, go to `https://<bems_fqdn>:<port>/docsconsole-sso` (for example, `https://bemsserver.example.com:8443/docsconsole-sso`). If you are authorized, you are automatically logged in using your Microsoft Active Directory credentials.
  - If your environment is configured to require a username and password, go to `https://<bems_fqdn>:<port>/docsconsole` (for example, `https://bemsserver.example.com:8443/docsconsole`). You must enter your Microsoft Active Directory credentials.
2. Click **Add Repository** to define a new data source.
3. In the **Display Name** field, type a display name. This name is displayed in repository lists in the console and on your device.
4. In the **Storage Type** field, select a storage type.
5. In the **Path** field, type the path.
6. Click **Save**.

**After you finish:** To remove a repository, click  beside it.

## Configuring support for Microsoft SharePoint Online and Microsoft OneDrive for Business

Microsoft SharePoint Online locations can be added as repositories in the Docs service just like an on-premise Microsoft SharePoint site to support both admin-defined and user-defined data sources. This is also true for Microsoft OneDrive for Business.

Microsoft SharePoint Online provides the following ways for users to authenticate and perform SharePoint operations:

- Using on-premises Microsoft Active Directory

- DirSync with Password Hash: Users and their passwords on Microsoft Active Directory are synchronized with Microsoft 365. Users are presented with a login page where they can enter their credentials to access Microsoft SharePoint Online.
- Active Directory Federation Service (ADFS): ADFS serves as a Secure Token Service. Behind the scenes (in background), users are redirected to ADFS for authentication and are issued security tokens that are then used by Microsoft SharePoint Online to sign in. Microsoft SharePoint Online users do not need to enter credentials when accessing from the corporate network, which typically enables sign sign-on scenarios.
- Using modern authentication: Enable modern authentication in the BEMS Dashboard.

These authentication mechanisms are supported by the Docs service and all preparations take place on the server side exclusively. No device changes are required to use the on-premises Active Directory. The following prerequisites are required for users to authenticate to Microsoft SharePoint Online:

- For users to authenticate to Microsoft SharePoint Online using Microsoft Active Directory, Microsoft SharePoint Online is deployed in your environment based on DirSync with Password Hash or ADFS authentication mechanisms.
- For users to authenticate to Microsoft SharePoint Online using modern authentication, Microsoft SharePoint Online is deployed in your environment and enabled for modern authentication in the BEMS Dashboard.

### Configure Microsoft SharePoint Online and Microsoft OneDrive for Business

For instructions on enabling modern authentication for Microsoft SharePoint Online, see [Enable modern authentication for Microsoft SharePoint Online](#).

1. In the **BlackBerry Enterprise Mobility Server Dashboard**, under **BlackBerry Services Configuration**, click **Docs**.
2. Click **Settings**.
3. In the **SharePoint Online** section, in the **SharePoint Online Domain** field, type the FQDN for your primary Microsoft SharePoint Online domain. Then, separated by a comma, type your FQDN for Microsoft OneDrive for Business. For example, example.sharepoint.com,myexample.sharepoint.com.
4. Click **Save**.
5. Restart the Good Technology Common Services service.
6. Click **Repositories**.
7. Click **New Repository**.
8. In the **Display Name** field, type a name for the repository,
9. In the **Storage Type** drop-down list, click **SharePoint**.
10. In the **Path** field, type path for your primary Microsoft SharePoint Online site from Step 2
11. Click **Save**.
12. Optionally, click **New Repository** for Microsoft OneDrive for Business and repeat steps 8 to 11 using the path for the Microsoft OneDrive for Business.
13. Click **Save**. Both repositories are listed in the repository list.

### Enable modern authentication for Microsoft SharePoint Online

You can also enable modern authentication for Microsoft SharePoint Online when you have Microsoft SharePoint configured in your environment.

**Before you begin:** If you enable modern authentication, configure the Entra registration in the **Docs > Settings** screen. For more information, see [Configure the Docs network and security settings](#).

1. In the **BlackBerry Enterprise Mobility Server Dashboard**, under **BlackBerry Services Configuration**, click **Docs**.
2. Click **Storages**.
3. Click the storage name **SharePoint Online**.

4. If this is a new installation, the following settings are selected by default:
  - **Authentication Provider** drop-down list: **Modern**. For information, see ['Authentication providers' in the BlackBerry Docs Service Configuration content](#).
  - **Use Azure registration from Settings** check box is selected. SharePoint uses the Entra registration settings that are specified in the **Docs > Settings** screen. For more information, see [Configure the Docs network and security settings](#).
5. If you upgraded from BEMS 2.10 or earlier and modern authentication was configured, no additional actions are required. Optionally, select the **Use Azure registration from Settings** check box for SharePoint to use the Entra registration settings that are specified in the **Docs > Settings** screen. For more information, see [Configure the Docs network and security settings](#).
6. To make the storage available on user devices, select the **Enable Storage** checkbox.

It may take up to an hour for storage changes to take effect on users' devices. It may take up to five minutes for the changes to take effect on the server. Enabling and disabling storage providers on this page affects what storage resources are visible at any given time for users, but it has no such impact on the server. If this option is not selected, users can't access the fileshare and receive the following error message on the device: "Data sources could not be retrieved. Unable to connect to the server".

**After you finish:** Add repositories in the added storage. For more information, see [Managing Repositories](#).

## In a BlackBerry UEM environment, add an app server hosting the Docs service to a BlackBerry Dynamics connectivity profile

To allow users in a BlackBerry UEM environment to access the BlackBerry Docs service on one or more BEMS-Docs servers, you must add the BEMS instances to a BlackBerry Dynamics Connectivity profile. Then you must assign the profile to users.

1. In the UEM management console, click **Policies and Profiles > Networks and Connections > BlackBerry Dynamics connectivity**.
2. Click **+** beside **BlackBerry Dynamics connectivity** profile to create a new connectivity profile or click on the default BlackBerry Dynamics connectivity profile to edit it.
3. In the **App servers** section, click **Add**.
4. Search for and select **Feature - Docs Service Entitlement** app.
5. Click **Save**.
6. In the table for the app, click **+**.
7. In the **Server** field, specify the FQDN of the BEMS server.
8. In the **Port** field, specify the port of the BlackBerry Proxy cluster that is used to access BEMS. By default, the port is 8443.
9. In the **Priority** drop-down list, specify the priority for the BEMS instance that the BlackBerry Work Docs will use. For example, if you have two BEMS instances, and you prefer that all connections go to BEMS 1 instance first, you specify the BEMS 1 entry as the priority primary. You can then specify that BEMS 2 is always secondary.
10. In the **Route type**, select **BlackBerry Proxy cluster**.
11. In the **Primary BlackBerry Proxy cluster** drop-down list, specify the name of the BlackBerry Proxy cluster (primary cluster 1) that you want to set as the primary cluster.
12. In the **Secondary BlackBerry Proxy cluster** drop-down list, specify the name of the BlackBerry Proxy cluster that you want to set as the secondary cluster.
13. Click **Save**.

14. Assign the "Feature - Docs Service Entitlement" to user accounts and groups. For more information, see the [see the BlackBerry UEM Administration content](#).

## Auditing the Docs service

You can configure BEMS to audit user actions to assist in identifying and troubleshooting issues between users and the Docs service. After you enable the Docs service, user actions such as downloads, browsing history, and files created can be audited. For more information on how to configure the Docs service audit properties and the audit operations that you want to log, see the [Monitoring and reporting content](#).

# Steps to configure the Docs service in a BlackBerry UEM Cloud environment

**Note:** Tenants that have enabled the BEMS Docs service in the UEM Cloud environment before May 2025, the Docs service will function as expected until December 1, 2025. Feature enablement for the Docs service has been disabled for all existing and new tenants. For more information, see the [UEM Cloud Dynamics Docs service in UEM Cloud End-of-Life Notice](#).

When you configure the BlackBerry Docs service, you configure the following components:

Step	Action
1	Enable the Docs service.
2	Configure the Docs service settings.
3	Create a trusted connection between the Docs service and Microsoft SharePoint.
4	Manage Repositories.
5	Assign the "Feature - Docs Service Entitlement (com.good.feature.share)" entitlement to users to allow BlackBerry Work Docs to connect to the Docs service.

## Enable the Docs service

To allow users access to document and file repositories in your environment, you must enable the Docs service. When you enable this service, a BEMS tenant is created and the UEM Cloud Docs Service (com.blackberry.gdservice-entitlement.docs.cloud) entitlement is added to the BlackBerry Dynamics connectivity profile.

**Before you begin:** To enable the Docs service, the BlackBerry UEM Cloud Docs Service (com.blackberry.gdservice-entitlement.docs.cloud) entitlement must be present in the Organization > Entitlements in <https://account.blackberry.com>. This app entitlement does not need to be assigned to users in BlackBerry UEM Cloud.

1. In the management console, click **Settings > BlackBerry Dynamics > Docs**.
2. Click **Enable**.

## Configure the Docs service settings

**Before you begin:**

- Verify that the Docs service is enabled.
- If your environment is configured for Microsoft SharePoint Online or Entra-IP, verify the following are registered in Entra:

- BlackBerry Work app so that it can access the Microsoft SharePoint Online repositories. For more information, see [Obtain an Entra app ID for BlackBerry Work](#) in the BlackBerry Work, Notes, and Tasks administration content.
  - The Docs service to provide your end users with access to stored enterprise data from their mobile devices. For more information, see [Obtain an Entra Azure app ID for the Docs component service](#).
  - If your environment is configured for Entra-IP, have the following information available:
    - Entra tenant name
    - BEMS service Entra application ID
    - BEMS service Entra application key
  - If the Docs service is configured to communicate with an on-premises Microsoft SharePoint instance, verify that Microsoft SharePoint repositories are using https secure ports. Using http non-secure ports is not supported.
  - Optionally, you can configure the Docs service to allow users to authenticate to Microsoft SharePoint Online and Microsoft OneDrive for Business with an email address that is different from the email address that was used to install and activate BlackBerry Work. To enable this feature, contact BlackBerry Technical Support Services.
1. In the management console, click **Settings > BlackBerry Dynamics > Docs**.
  2. Click the **Settings** tab.
  3. Complete one or both of the following tasks.

Environment	Steps
Your environment is configured to use Microsoft SharePoint Online or Entra-IP and Microsoft SharePoint Online	<ol style="list-style-type: none"> <li>Optionally, select the <b>Enable Azure Information Protection</b> check box to allow Docs service to authenticate to Entra-IP.</li> <li>Enter the Entra tenant name.</li> <li>Enter the BEMS service Entra application ID that you obtained when you registered the Docs component service.</li> <li>Enter the BEMS service Entra application key that you obtained when you registered the Docs app in Entra.</li> </ol>
Your environment is configured to use an on-premises Microsoft SharePoint	<ol style="list-style-type: none"> <li>Select the <b>Enable BlackBerry Connectivity Node</b> route check box to allow Docs to connect to the BlackBerry Infrastructure instead of using an inbound port. This setting requires that the BlackBerry Connectivity Node is installed and configured in your environment.</li> <li>To allow the Docs service to communicate with an on-premises Microsoft SharePoint server, extract the Microsoft SharePoint server certificate and send it to BlackBerry Technical Support Services. If the on-premises Microsoft SharePoint sites use certificates that are not publicly trusted (for example, self-signed or enterprise CA certs), then send these certificates to BlackBerry Technical Support Services.</li> </ol>

4. Click **Save**.

## Create a trusted connection between the Docs service and Microsoft SharePoint

By default, the Docs service in the BlackBerry UEM Cloud environment is only aware of public CA certificates. If you enable the Docs service and your organization's Microsoft SharePoint on-premises doesn't use an SSL

certificate issued by a trusted CA for HTTPS sites, the connection between the Docs service and Microsoft SharePoint on-premises isn't trusted, and users won't be able to access files and documents from the BlackBerry Work Docs app. To create a trusted connection to Microsoft SharePoint, upload the server's SSL certificate if it is self-signed, or the root or intermediate certificate chain to the BEMS Cloud database. You can upload a base64-encoded or binary-encoded file that includes one or more SSL certificates. When you upload a single file that includes multiple SSL certificates, the certificates are displayed in the management console and can be deleted and replaced individually as required. BEMS Cloud supports the following file extensions: .der, .cer, .pem, and .crt.

**Before you begin:** Verify that you have exported the SSL certificate from the Microsoft SharePoint server in a base64-encoded or binary-encoded format and stored it in a network location that you can access from the management console.

1. On the menu, click **Settings > BlackBerry Dynamics > Docs**.
2. Click the **Certificates** tab.
3. Click **Add** and navigate to the location of the certificate file that you want to upload.
4. Click **Add**.
5. If you upload individual SSL certificates, repeat the previous steps for each additional file.

**After you finish:** To replace or delete a trusted connection certificate, click delete below each certificate file that you want to delete and add the newly exported SSL certificate files as necessary.

## Managing repositories in a BlackBerry UEM Cloud environment

The Docs service provides your end users with access to stored enterprise data from their mobile devices. A Docs repository (also called a "share") lives on an enterprise server containing files shared by authorized users.

Before you can select a repository, you must [enable the Docs service](#). After the repository is selected, entitle your users so that they can access the repositories you add and define from their devices.

Storage repository	Description
SharePoint	A secure web server containing shared files which are accessed via the Internet.
SharePoint Online	If your environment is configured for Microsoft OneDrive for Business, the SharePoint Online storage repository is used.
Box	A secure cloud storage account furnished by box.com containing shared files which can be accessed via the Internet.

A repository is further categorized in the Docs service by who added and defined it.

Storage repository	Description
Admin-defined	Storage provider sites added and maintained by BlackBerry UEM administrators to which individual users and user groups are granted access.
User-defined	Sites added by individual end users from their mobile devices to which you, as the UEM administrator, may rescind and reinstate mobile-based access in accordance with your enterprise IT acceptable-use policies.



## Configuring repositories in a BlackBerry UEM Cloud environment

The Repository configuration page has the following three tabs that you can configure:

Tabs	Description
Admin defined	Allows you to create and manage repositories, add and remove users and user groups, and assign users and user groups file access and use permissions.
User defined	Allows you to add and remove users and user groups, enable and disable user and user group the ability to create user-defined repositories, and grant and rescind permissions to perform a range of file-related actions on their user-defined repositories.
Users	Allows you to search for users that have been added to the BlackBerry UEM Cloud tenant to view the repositories permitted by path or override, and who defined the share (for example, administrator or user).

### Steps to define admin-defined repositories

When you define repositories, you perform the following actions:

Step	Action
1	Define a repository.
2	Add users and user groups to repositories.

### Admin-defined user access permissions

Access permissions are defined for a single repository or inherited from an existing list of repositories. Repository lists are not supported by BlackBerry UEM Cloud. Permissions can be selectively granted to existing Microsoft Active Directory domain users and user groups. At least one user or user group must be added to the repository definition to configure access permissions.

The following table lists the permissions that are provided by default when you add users and groups to the Admin-defined repositories.

Permission	Permissions Attributes	Default setting
List (Browse)	View and browse repository content (for example, subfolders and files) in a displayed list, and sort lists by Name, Date, Size, or Kind.	Enabled
Delete Files	Remove files from the repository.	Enabled
Read (Download)	Download repository files to the user's device and open them to read.  When you enable this permission, BlackBerry recommends that users do not download more than 50 files at a time, or the downloads might not function as expected.	Enabled

Permission	Permissions Attributes	Default setting
Write (Upload)	Upload files (new/modified) from user's device to the repository for storage.	Enabled
Cache (Offline Files)	Temporarily store a cache of repository files on the device for offline access.  You can designate files and folders to synchronize to users' BlackBerry Work Docs app Offline folder.	Enabled
Open In	Open a file in a format-compatible app on the device.	Enabled
Create Folder	Add new folders to the repository.	Enabled
Copy/Paste	Copy repository file content and paste it into a different file or app.	Enabled
Check In/Check Out	When a file is checked out, the user can edit, close, reopen, and work with the file offline. Other users cannot change the file or see changes until it is checked back in.	Enabled (SharePoint only)
Generate Shared Link	Users can generate a link to a file and folder and send the link to recipients.  The Generate Shared Link requires an updated BlackBerry Work app.	Enabled (Box only)

### Define a repository

1. In the management console, click **Settings > BlackBerry Dynamics > Docs**.
2. Click **Repositories**.
3. Click the **Admin defined** tab.
4. Click **+**.
5. In the **Name** field, type the name of the repository that will be displayed to users granted mobile access to the repository.  
The repository name must be unique and can contain spaces. The following special characters cannot be used due to third-party limitations:
  - Microsoft SharePoint 2016, and 2019: ~ " # % & \* : < > ? / \ { | }
  - Box: \ / |
6. In the **Storage** drop-down list, select a storage provider.  
If you select **SharePoint** or **SharePoint Online**, and the share is running SharePoint 2016 or later, select the **Add sites followed by users on this site** check box to make this feature available to users of this share. This setting applies to personal (my) SharePoint or OneDrive for Business sites only.  
If your environment is configured for Microsoft OneDrive for Business, select the **SharePoint Online** storage provider.
7. In the **Path** field, specify the path to the share. Complete one of the following tasks based on the storage provider that you selected.  
The following variables are supported in the Path field:
  - username

- sAMAccountName
- mail
- dnsDomain
- If the personal site includes usernames, enter the path including these variables. For example, https://sharepoint.example.com/my/<sAMAccountName>.

Storage type	Task
Box	Enter a fully qualified URL with or without the supported variables listed above.
SharePoint	Enter a fully qualified URL with or without the supported variables listed above.
SharePoint Online	To add "my" or personal SharePoint sites, specify the URL for the "my" site. For example,
Microsoft OneDrive for Business	<ul style="list-style-type: none"> <li>• If your environment uses SharePoint and SharePoint Online, https://&lt;Microsoft SharePoint server&gt;/my.</li> <li>• If your environment uses Microsoft OneDrive for Business, https://&lt;your O365 domain&gt;-my.sharepoint.com/personal/admin_&lt;domain&gt;_onmicrosoft_com/_layouts/15/onedrive.aspx</li> </ul> <p>Optionally, to automatically add followed sites, complete the following steps:</p> <ol style="list-style-type: none"> <li>a. Add a repository for the "my" or personal SharePoint site.</li> <li>b. Select the <b>Add sites followed by users on this site</b> for the repository.</li> <li>c. On the <b>User-defined</b> tab, enable a user-defined repository permission. Make sure that you select the <b>Enable 'User Defined Shares'</b> and <b>Automatically add sites followed by users</b> check boxes. For more information, see <a href="#">Enable user-defined repository permissions</a>.</li> </ol>

8. In the **Access permissions** section, click **+**.
9. Select one of the following:
  - **Users:** In the **Add a user** dialog box, field, type a full or partial search string. Click the user that you want to add.
  - **Groups:** In the **Add a group** screen, select one or more groups. Click **➔**. Click **Add**.
10. Click **Add**.
11. Click **Test** and enter the test user login credentials to validate the repository information on behalf of the user, including the repository path, access to the user account, and the offline files and folders path. If the test fails, the appropriate message is displayed (for example, "No user or user group assigned permission to access the repository" or "Could not validate path(s) <file/folder path>"). Resolve the issue that is specified and test again.

### Add users and user groups to repositories

You must add Microsoft Active Directory users and groups to a repository definition before you can configure access permissions. Users and groups that are added automatically receive the default access permissions.

1. In the management console, click **Settings > BlackBerry Dynamics > Docs**.
2. Click **Repositories**.
3. Click the **Admin Defined** tab.
4. Click a repository.
5. In the **Access permissions** section, click **+**.

6. Select one of the following:

- **Users:** In the **Add a user** dialog box, field, type a full or partial search string. Click the user that you want to add.
- **Groups:** In the **Add a group** screen, select one or more groups. Click ➔. Click **Add**.

7. Click **Add**.

8. Click **Save**.

**After you finish:** To edit the user and user groups access permissions, select the repository and make the required changes.

## Enable user-defined repository permissions

You can allow users to create their own links to existing document repositories using the BlackBerry Work app.

**Before you begin:** For users to access their Microsoft SharePoint repositories on their devices, verify that they have the "Read" permission level and the "Browse Directories" permission assigned.

1. In the management console, click **Settings > BlackBerry Dynamics > Docs**.

2. Click **Repositories**.

3. Click the **User Defined** tab.

4. Select the **Enable 'User Defined Shares'** check box to allow mobile users to define their own data sources.

5. Optionally, select the **Automatically add sites followed by users** check box for authorized Microsoft SharePoint repositories with the required MySite plugin enabled.

To automatically add followed sites, complete the following steps:

- a. On the **Admin-defined** tab, add a repository for the "my" or personal SharePoint site. For more information, see [Define a repository](#).
- b. Select the **Add sites followed by users on this site** for the repository.
- c. On the **User-defined** tab, select the **Enable user-defined shares** and **Automatically add sites followed by users** check boxes.

6. In the **Storage** section, select one or more storage services.

If you do not select at least one storage option, the user-defined option is disabled.

7. In the **Access Permissions** section, click +.

8. Select **Users** or **Groups**.

9. To add users, in the **Add a user** dialog box, field, type a full or partial search string. Click the user that you want to add. Click **Add**. The users added automatically receive the default access permissions.

10. To add a group, in the **Add a group** screen, select one or more groups. Click ➔. Click **Add**. The groups added automatically receive the default access permissions.

11. Click **Add**. The users and groups added automatically receive the default access permissions.

12. Click **Save**.

**After you finish:**

- To change the user or group access permissions, in the **Access Permissions** section, beside the user or group, select or clear the permission check box that you want to change.
- To remove a user or group, click **X** beside the user or group.

## User-defined access permissions

Permissions can be selectively granted to existing Microsoft Active Directory domain users and user groups. The most restrictive permissions (admin-defined or user-defined) are applied.

The following table lists the permissions that are provided by default when you add users and groups to the User-defined repositories.

Permission	Permissions Attributes	Default setting
List (Browse)	View and browse repository content (for example, subfolders and files) in a displayed list, and sort lists by Name, Date, Size, or Kind.	Enabled
Delete Files	Remove files from the repository.	Enabled
Read (Download)	Download repository files to the user's device and open them to read.	Enabled
Write (Upload)	Upload files (new/modified) from user's device to the repository for storage.	Enabled
Cache (Offline Files)	Temporarily store a cache of repository files on the device for offline access.  You can designate files and folders to synchronize to users' BlackBerry Work Docs app Offline folder.	Enabled
Open In	Open a file in a format-compatible app on the device.	Enabled
Create Folder	Add new folders to the repository.	Enabled
Copy/Paste	Copy repository file content and paste it into a different file or app.	Enabled
Check In/Check Out	When a file is checked out, the user can edit, close, reopen, and work with the file offline. Other users cannot change the file or see changes until it is checked back in.	Enabled (SharePoint only)
Add New Repositories	Permits new repositories to be added from the user's mobile device.	Disabled
Generate Shared Link	Users can generate a link to a file and folder and send the link to recipients.  The Generate Shared Link requires an updated BlackBerry Work app.	Enabled (Box only)

### View user repository rights

In some scenarios, you may need to search for a particular user to review which repositories are configured for their access, as well as the specific permissions granted. For example, when a user is one member of a Microsoft Active Directory group configured for repositories and is not listed individually in your admin-defined or user-defined repository configurations, and you want to consider making specific changes to the user's access permissions.

1. In the management console, click **Settings > BlackBerry Dynamics > Docs**.
2. Click the **Repositories** tab.

3. Click the **Users** tab.
4. In the **Search** field, begin typing the user's Microsoft Active Directory account name. If you don't see the user you want, extend or narrow the search string.
5. Click the user name. The **Defined by** column specifies if the repository is admin-defined or user-defined.
6. Click the name of the repository or on the row to view the user's access permissions. To modify the access permissions, select or clear the permission for the user.
7. Optionally, if the repository is admin-defined, in the **Override Path for this user** field, enter an override path.
8. Optionally, if the repository is user-defined, in the **Repository name** field, enter a new repository name.

# Configuring the Docs instance for high availability

When you configure Docs for high availability, you perform the following actions:

Step	Action
1	Configure each new Docs instance to use the existing database.
2	Add the computer that hosts the Docs service to the entitlement.

# Next steps to configure BEMS

After you complete the tasks to configure the Docs service, see to the following configuration content to configure the necessary services and install and configure BlackBerry Dynamics apps:

Step	Action
On-premises environment	<ul style="list-style-type: none"><li>• <a href="#">BEMS Core service</a>: This service provides the core functionality of BEMS. You must configure the Core services for the shared settings for all of the BEMS services (for example, certificates, database settings).</li><li>• <a href="#">BlackBerry Connect service</a>: This service provides secure instant messaging, company directory lookup, and user presence information to iOS and Android devices.</li><li>• <a href="#">BlackBerry Presence service</a>: This service provides real-time presence status to BlackBerry Work, BlackBerry Dynamics Launcher, and third-party BlackBerry Dynamics apps.</li><li>• <a href="#">BlackBerry Mail (BlackBerry Push Notifications) service</a>: This service accepts push registration requests from iOS and Android devices, and then communicates with the on-premises Microsoft Exchange Server or Microsoft Exchange Online using Microsoft Exchange Web Services protocol to monitor the user's enterprise mailbox for changes.</li></ul>
UEM Cloud environment	<a href="#">Configure email notifications for BlackBerry Work</a> , if necessary: This service accepts push registration requests from iOS and Android devices, and then communicates with the on-premises Microsoft Exchange Server or Microsoft Exchange Online to check the user's mailbox for changes. BlackBerry Work.
Configure BlackBerry Work	For users to access, synchronize, and share documents natively using their enterprise file server, Microsoft SharePoint Online, SharePoint, Microsoft OneDrive for Business, Box, and content management systems supporting CMIS, without the need for VPN software, firewall reconfiguration, or duplicate data stores, assign the app entitlements to the organization to allow users to use the BlackBerry Work Docs app. For more information about managing BlackBerry Work, <a href="#">see the BlackBerry Work, BlackBerry Notes, and BlackBerry Tasks Administration content</a> .



# Appendix: File types supported by the BlackBerry Docs service

The following file types and extensions are currently supported by the BlackBerry Docs service and as mail attachments:

.goodsharefile	.tiff	.utf16-plain-text,
.doc, Docx	.apple.pict	.rtf
wordprocessingml.document	.compuserve.gif	.html
powerpoint.ppt, PPTx	.png	.xml
excel.xls, XLSX	.quicktime-image	.xhtml
spreadsheetml.sheet,	.bmp	.htm
adobe.pdf	.camera-raw-image	.data
apple.rtf,	.svg-image,	.content
apple.webarchive	.text	.zip
.image	.plain-text	
.jpeg	.utf8-plain-text	

The following media file types are supported on iOS devices only:

.3gp	.caf	.au
.mp3	.aac	.snd
.mp4	.adts	.sd2
.m4a	.aif	.mov
.m4v	.aiff	
.wav	.aifc	

## Supported files and storage types

Documents in a supported file format can reside on any of the following storage types:

- File Shares
- Microsoft SharePoint Online

- Microsoft SharePoint

For information about the supported Microsoft SharePoint versions, [see the BEMS Compatibility Matrix](#).

#### Supported devices

- iOS devices
  - iPad: view and edit
  - iPhone: view only
- Android devices
  - Phones: view only
  - Tablets: view only

# Appendix: Windows Folder Redirection (Native)

This feature gives administrators the ability to redirect the path of a folder to a new location, which can be on the local computer or a directory on a network file share. Users can work with documents on a server as if the documents were based on a local drive. The documents in the folder are available to the user from any computer on the network.

Folder Redirection is located under **Windows Settings** in the console tree when you edit a domain-based Group Policy using the Group Policy Management Console (GPMC). The path is *<Group Policy Object Name> \User Configuration\Policies\Windows Settings\Folder Redirection*.

Offline File technology (turned on by default) gives users access to the folder even when they are not connected to the network, and is especially useful on laptops and mobile devices. Offline folders do not, however, work out of the box with Samba network drives. See *Offline Folders (Native)* for details. Otherwise, Windows Folder Redirection can be enabled for any of the predefined folders in the Group Policy Management Editor.

The following different folders can be redirected.

- AppData (Roaming)
- Desktop
- Start Menu
- Documents
- Pictures
- Music
- Favorites
- Contacts
- Downloads
- Links
- Saved Games
- Searches
- Videos

As an administrator, you must create the root folder for the destination location. This folder can be created on a local or remote machine (NAS).

All members of the group who have Windows Folder Redirection enabled must have full access to the root folder.

## Enable folder redirection and configure access

When you enable folder redirection the user's folder will have exclusive user permissions. Other users cannot see the files. The user can update, add new, and delete files. When the user connects to the corporate network, the files are automatically synchronized with the redirected location.

If modifications are made on the file in both locations at the same time, an alert is issued, and the user is responsible for resolving the conflict; for example, keep the source, keep the destination, or keep both files).

If a user uploads a file through a mobile app directly to the share, the file is visible on the local computer in the Documents folder. Moreover, when the Docs service is configured with "User Private Shares" pointing to the redirected root folder—for example, C:\RedirectShare\— users can automatically use their own folders inside the mobile app from the "Home Directory" on their phone or tablet.

Users with their home folder defined in Microsoft Active Directory, Folder Redirection works when the redirection path is the same as the user's home folder in Microsoft Active Directory.

1. Create a root folder (for example, RedirectShare) for the redirect destination.
2. In the **Group Policy Management Editor**, select a specific folder (for example, Documents) and add one or more rules to determine which users and user groups can redirect the selected folder to the root folder.
3. Set an environment variable **%USERNAME%** to the path *[Root]\<username>\Documents\*.

# Appendix: Local Folder Synchronization – Offline Folders (Native)

Users who work remotely on content creation and save files locally for offline access, can now access these files on-the-go from their mobile devices without having to open their local machine. The Docs service provides authorized users access to their Home Directory hosted on network-attached storage (NAS) shares and exposed through Microsoft Active Directory. This synchronization feature, syncing folders on the user's remote laptop or desktop with their home directory, is only available on local machines running Microsoft Windows.

When you select a network file or folder to make it available offline, Windows automatically creates a copy of that file or folder on your computer. Thereafter, any time you reconnect to the network folder, Windows synchronizes these files with those in the network folder. You can also synchronize them manually any time you want. As pointed out above, this feature does not work out of the box with a Samba network drive, and workarounds are not currently supported by Microsoft. Otherwise, the feature can be enabled from Windows Explorer and used for any shared folder as pictured.

Now that the shared folder is available offline, it can be used offline. Users can even make a shortcut to the shared folder on their desktop for convenience. When working offline and changes are made to offline files in a network folder, Windows automatically synchronizes the changes the next time you connect to that network folder. You can also manually synchronize changes by clicking the Sync Center tool .

Additionally, there are more advanced synchronization scheduling controls available in the Windows Sync Center.

If the user is working offline while someone else changes a file in a shared network folder, Windows synchronizes those changes with the offline file on the local computer the next time it connects to that network folder. If a synchronization conflict occurs, for example, changes were made to both the network and offline versions of the file between syncups, Windows prompts the user to confirm which change takes precedence.

Files that were cached automatically are removed on a least-recently used basis once the maximum cache size is reached. Files cached manually are never removed from the local cache. When the total cache size limit is reached and all files that were cached automatically have already been removed, files cannot be made available offline until you specify a new limit or delete files from the local cache by using the Offline Files control panel applet.

The default size limit for the Offline Files cache is 25-percent of the total disk space of the drive where the cache is located. The cache size can be configured through the Group Policy by setting the limit on disk space used by Offline Files—go to Computer Configuration > Policies > Administrative Templates > Network > Offline Files—on each client separately.

Synchronization takes place a few minutes after the user logs in and connects/opens a shared network folder containing offline files and is schedule- or event-based. However, this must still be enabled manually by each user. Even so, through the Group Policy editor, the domain administrator can set various synchronization triggers; e.g., On Logon, On Logoff, Sync Interval, etc.

These settings are available in User Configuration\Administrative Templates\Network\Offline Files and in Computer Configuration\Administrative Templates\Network\Offline Files in the Group Policy Object Editor snap-in. For more information about policy settings, see the Explain tab on the Properties page of each policy.

Folder Redirection and Offline Folders, provide the following advantages compared to a proprietary laptop/desktop agent furnished by Good:

- IT does not have to manage and deploy another desktop agent
- Microsoft Folder Redirection is integrated with GPO and manages conflicts
- Existing compliance tools and processes govern the data.

Once the files are synchronized to the “Home Directory,” IT administrators can make use of the Docs service feature in which Microsoft Active Directory attributes can be specified in the path to expose the user's “Home

Directory” to the BlackBerry Work app running on provisioned mobile devices. It is also important to remember that for users who have their home folder defined in Microsoft Active Directory, Folder Redirection works when the folder redirection path is the same as the user’s home folder in Microsoft Active Directory.

# Appendix: Supported Microsoft Office Web Apps and Office Online Server file types

Docs support for Microsoft Office Web Apps (OWAS) and Office Online Server gives your users the ability to view and edit Office documents and convert them to PDF format in BlackBerry Work and other BlackBerry Dynamics-powered apps that use the Docs service. This is all done within the secure BlackBerry Dynamics container. The BlackBerry Work Docs component is used to browse and select the files. BlackBerry Access is used to view and edit the documents.

The following table lists the supported file types for Microsoft Word.

File format	View	Edit
Open XML (.docx)	✓	✓ iPad only
Binary (.doc)	✓	—
Macro (.docm)	✓	— Macros don't work
Templates (.dotm, .dotx)	✓	—
Other file formats (.dot, .mht, .mhtml, htm, .html, .odt, .rtf, .txt, .xml, .wps, .wpd)	—	—

The following table lists the supported file types for Microsoft Excel.

File format	View	Edit
Open XML (.xlsx)	✓	✓
Binary (.xlsb)	✓	✓
Binary (.xls)	—	—
Macro (.xlsm)	✓	✓ You are prompted to create a copy of the file that has the macros removed when you save the changes that you have made
Other file formats (.xltx, .xltm, .xlam, .xlm, .xla, .xlt, .xml, .xll, .xlw, ods, .prn, .txt, .csv, .mdb, .mde, .accdb, .accde, .dbc, .igy, .dqy, .rqy, .log, .cub, .ux)	—	—

The following table lists the supported file types for Microsoft PowerPoint.

File format	View	Edit
Open XML (.pptx, .ppsx)	✓	✓ iPad only
Binary (.ppt, .pps)	✓	✓ PowerPoint Online or PowerPoint Web App converts the .ppt or .pps file to a .pptx or .ppsx file to allow you to edit the file, but you must save the file as a .pptx or .ppsx file to save your changes.
Macro (.pptm, .potm, .ppam, .potx, .ppsm)	✓	—
Other file formats (.pot, .htm, .html, .mht, .mhtml, .txt, .rtf, .w .thmx)	—	—

The following table lists the supported file types for PDF and OpenDocument.

File format	View	Edit
PDF (.pdf)	✓	—
OpenDocument Text (.odt)	✓	—
OpenDocument Spreadsheet (.ods)	✓	✓
OpenDocument Presentation (.odp)	✓	✓

For more information, see [KB 2028380](#).



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