

Metalogix® StoragePoint 6.0.

File System Adapter Guide



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Legend



CAUTION: A caution icon indicates potential damage to hardware or loss of data if instructions are not followed.



IMPORTANT, NOTE, TIP, MOBILE OR VIDEO: An information icon indicates supporting information.

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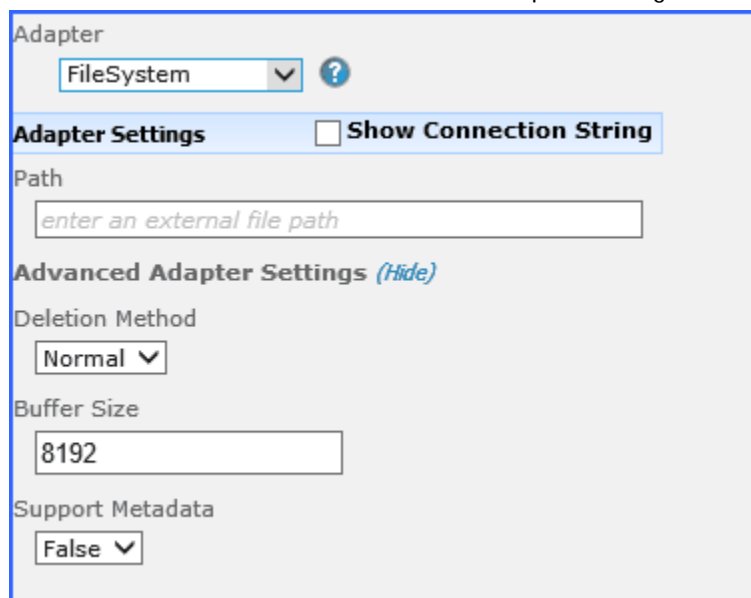
FileSystem Adapter Configuration

This section will provide you details on how to configure a storage endpoint's connection string to utilize the File System Adapter, which is standard with StoragePoint. Please refer to the StoragePoint Reference Guide for information on managing Storage Endpoints.

On the Application Management page, click *Storage and Backup Endpoints*.

Click *Create New Endpoint* or click the name of an existing storage endpoint that you want to edit.

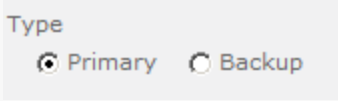
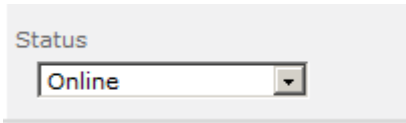

Click the *Show* link next to the Advanced Adapter Settings to see the additional fields.



The screenshot shows a configuration form for the FileSystem Adapter. At the top, there is a dropdown menu labeled 'Adapter' with 'FileSystem' selected and a help icon. Below this is a section titled 'Adapter Settings' with a checkbox for 'Show Connection String'. Under 'Adapter Settings' is a text input field for 'Path' with a placeholder 'enter an external file path'. Below the 'Path' field is a section titled 'Advanced Adapter Settings' with a '(Hide)' link. Under 'Advanced Adapter Settings' are three fields: 'Deletion Method' with a dropdown menu showing 'Normal', 'Buffer Size' with a text input field containing '8192', and 'Support Metadata' with a dropdown menu showing 'False'.

FileSystem Adapter Connection String Parameters

Setting	Value/Options
Name	Enter the unique name of the Storage or Backup Endpoint.

Setting	Value/Options
<p>Type</p>  <p>See Backup Services Settings in the Reference Guide for more information on how Backup Endpoints are used.</p>	<p><i>Primary</i>– this endpoint will be available for externalization when creating storage profiles.</p> <p><i>Backup</i>– this endpoint will be in the Backup Services dropdown on the profile page.</p> <p>The selection is locked down when saving.</p>
<p>Status</p> 	<p><i>Online</i>– Storage Endpoint should be available to associate to a Storage Profile and accept BLOBs. (default)</p> <p><i>Offline (Read Only)</i>– A storage endpoint can be configured, but not made available for externalizing content. The BLOBs already on the endpoint are still read only.</p>
<p>Adapter</p> 	<p>Select the adapter for the endpoint that is being created. The <i>FileSystem</i> adapter is installed with the</p>

Setting	Value/Options
	core product by default.
<div> <div>Adapter Settings</div> <div> <input type="checkbox"/> Show Connection String </div> <div> Path <input type="text"/> </div> <div> Advanced Adapter Settings (Show) </div> </div>	Enter an adapter-specific connection string in this box.
<div> <div>Is WORM Device</div> <div> <input type="button" value="No"/> </div> </div>	If the endpoint is on a WORM (Write Once, Read Many) device, Unused BLOB Cleanup will ignore this endpoint.
<div> <div>Folder Content in BLOB Store</div> <div> <input type="button" value="Yes"/> </div> <div> Folder Scheme <input type="text" value="YYYY/MM/DD/HH/MM"/> </div> </div>	<p><i>No</i>– Externalized content BLOBs are not placed in folders (default).</p> <p><i>Yes</i>– Externalized content BLOBs are placed in folders.</p> <p>If <i>Folder Content in BLOB Store</i> is <i>Yes</i> then you can select a date/time folder scheme from the dropdown.</p> <p>YYYY/MM/DD/HH/MM is the default.</p>
<div> <div>Test Storage Settings</div> </div>	The Test Storage Settings button can be used at this point, or after

Setting	Value/Options
	completing the endpoint configuration, to verify that the endpoint is accessible.
<p>Compress Content in BLOB Store</p> <p><input type="button" value="No"/> </p> <p><i>Content is compressed using the GZip/Deflate method.</i></p>	<p><i>No</i>– Externalized content BLOBs are not compressed (default).</p> <p><i>Yes</i>– Externalized content BLOBs are compressed.</p>
<p>Encryption Method for Content in BLOB Store</p> <p><input type="button" value="None"/> </p>	<p><i>None</i>– Encryption will not be applied to externalized BLOBs (default).</p> <p><i>AES (128 bit)</i>– 128 bit AES encryption will be applied to externalized BLOBs.</p> <p><i>AES (256 bit)</i>– 256 bit AES encryption will be applied to externalized BLOBs.</p>
<p>Encryption Key Passphrase</p> <p><input type="text"/> <input type="button" value="Generate Key"/></p> <p><i>Enter a passphrase to be used to generate a key or leave blank to generate a random key. The passphrase entered is not saved with the Endpoint.</i></p>	<p>Enter a passphrase to use when generating the encryption key. Using a passphrase will help you re-create the encryption key if necessary. You can generate a random</p>

Setting	Value/Options
	key by leaving the box blank and clicking the <i>Generate Key</i> button. The encryption key passphrase will be hidden.
<p>Generate warning notification if:</p> <p><input checked="" type="checkbox"/> <input type="text" value="10"/> or more successive errors are encountered</p> <p><input checked="" type="checkbox"/> there is less than <input type="text" value="10"/> <input checked="" type="radio"/> MB <input type="radio"/> % of free space</p>	A warning email can be sent if it encounters errors or is nearing capacity.
<p>Automatically take endpoint offline if:</p> <p><input checked="" type="checkbox"/> <input type="text" value="25"/> or more successive errors are encountered</p> <p><input checked="" type="checkbox"/> there is less than <input type="text" value="1"/> <input checked="" type="radio"/> MB <input type="radio"/> % of free space</p>	An online storage endpoint can be automatically taken offline if it encounters errors or is nearing capacity. If a storage endpoint is taken offline automatically, BLOBs that were intended to be written to that endpoint will go to the content database.
<p>Send Offline Notifications to:</p> <p><input checked="" type="checkbox"/> Use Notification Defaults</p> <p>Additional Contacts</p> <p><input type="text" value="admin@company.com"/></p> <p><i>Provide a semi-colon delimited list of e-mail addresses.</i></p>	Default email addresses for system error and offline notification can be entered. Check the box to include the list of Default Notification Contacts specified

Setting	Value/Options
	on the General Settings page.

Example Storage Endpoint using FileSystem Adapter

Storage Settings
Provide storage device settings in this section.

Adapter: FileSystem

Adapter Settings ☐ Show Connection String

Path: \\Det-qa-2013wfe1\d\General FS Endpoint

Advanced Adapter Settings [\(hide\)](#)

Deletion Method: Normal

Buffer Size: 8192

Support Metadata: False

Click the *Show Connection String* checkbox to edit the connection string. Otherwise, fill in the connection fields shown for the adapter selected. Notice that the connection string parameters are name/value pairs separated by semi-colons.

Storage Settings
Provide storage device settings in this section.

Adapter: FileSystem

Adapter Settings ☒ Show Connection String

Connection: PATH=\\Det-qa-2013wfe1\d\General FS Endpoint;AUDITDELETE=False;BUFFERSIZE=8192;SHREDONDELETE=False;USEMETA=False;

Provide adapter-specific connection attributes. Please refer to the adapter documentation for connection string details.

NOTE: Adapter parameters are not case-sensitive.

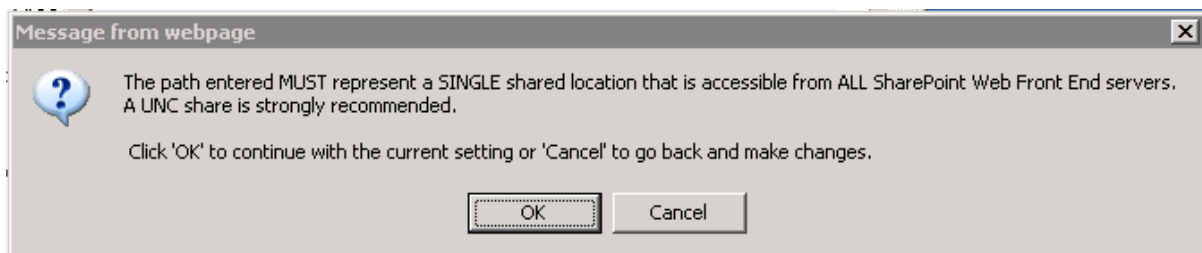
NOTE: You should always use a passphrase when generating encryption keys. The passphrase gives you a means of re-creating keys should they become unrecoverable or corrupt. It is very important to remember or record the passphrase outside of Metalogix StoragePoint. Otherwise, encrypted content could become irretrievable in the event of a database failure.

If you choose to externalize content you should test the storage profile settings by clicking the *Test Storage Settings* button. A message under the button will indicate whether or not the test was successful. If the test fails the message will include the error that was the root cause of the failure.



NOTE: When testing access to an endpoint (fileshare) from within Central Administration, the Identity of the Application Pool hosting the Central Administration Site is the one that is being used for the test. If there are different Identities used for other Web Applications in the Farm then those identities will also need access but cannot be tested from within Central Admin itself. See BLOB Store Security and Metalogix StoragePoint Required Privileges in the Metalogix StoragePoint Reference Guide.

If the path you entered for your FileSystem storage endpoint is not in a UNC format, you will see this message when saving to verify that your storage endpoint is accessible by all the WFEs in your SharePoint farm.



FileSystem Adapter Connection String Options

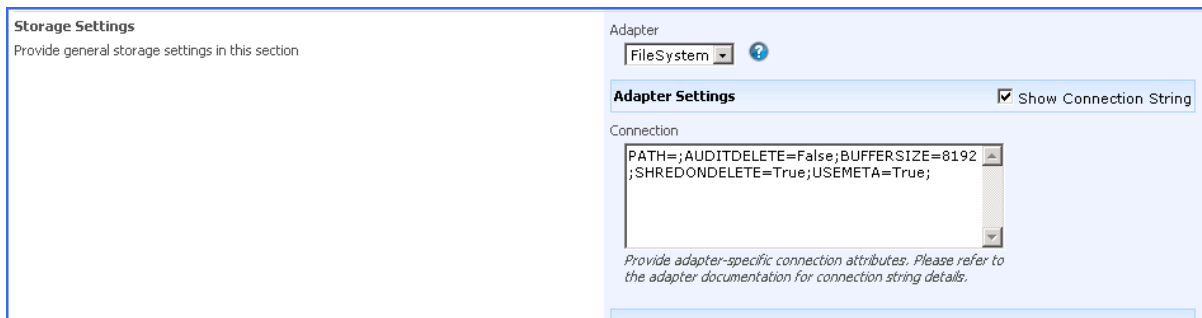
The built-in FileSystem adapter in Metalogix StoragePoint has a number of options to enable specific diagnostic and enhanced functionality. These options must be specified as attributes in the Connection string on the storage endpoint.

Shred BLOB Files on Delete

The Shred on Delete option will cause the Unused BLOB Cleanup Job and Recall jobs to do a “secure” delete when they remove files from the external BLOB store. A “secure” delete consists of writing several passes of 0's, 1's and random bit patterns over the file before deleting it on the file store. This prevents the file from being recovered using file deletion recovery tools.

This option is turned on by appending ;ShredOnDelete=true to the Connection string of a profile that uses the FileSystem adapter:

Click the Show Connection String checkbox to edit the string.



Or, click the Show link next to the Advanced Adapter Settings to see the drop down field.

Endpoint Name	Name <input type="text"/>
Endpoint Status	Status <input type="button" value="Online"/>
Storage Settings Provide general storage settings in this section	Adapter <input type="button" value="FileSystem"/> ? Adapter Settings <input type="checkbox"/> Show Connection String Path <input type="text"/> Advanced Adapter Settings (Hide) Deletion Method <input type="button" value="Shred"/> Buffer Size <input type="text" value="8192"/> Support Metadata <input type="button" value="True"/>

Please keep the following limitations in mind when using this feature:

- Deletions of BLOB files only occur when the Unused BLOB Cleanup and Recall jobs remove them. Deleting a document in SharePoint does not immediately remove it from the BLOB store.
- Not all devices support secure delete. Most SCSI and SATA drives support the necessary device options. Some CIFS shares and other remote file store devices may not support it. It is important to test the option after turning it on.
- Many dedicated filer devices offer device level secure delete (i.e. HCAP, Centera, etc.). It is preferable to use the device's capabilities if they are present.
- Deletes of BLOB files are never guaranteed. Although unlikely, it is possible a BLOB file may be "leaked" on the BLOB store and not cleaned up by the Unused BLOB Cleanup Job. Metalogix StoragePoint support has tools to help clean these up periodically.
- This option is specific to the Metalogix StoragePoint FileSystem adapter. It does not work on other storage adapters.

Deletion Audit

The Deletion Audit option stops Metalogix StoragePoint from physically deleting orphaned BLOB files. Instead they are renamed with a .DEL extension. In addition, every time Metalogix StoragePoint attempts to delete a BLOB file, a log entry is made in the SharePoint logs to identify information about the deletion. This option should be used if removal of content BLOBs from the file store needs to be audited first. In this case, the removal of the .DEL files is the responsibility of the client (i.e. Metalogix StoragePoint does not remove these).

This option is turned on by appending ;AuditDelete=true to the Connection string of a profile that uses the FileSystem adapter:

Click the Show Connection String checkbox to edit the string.

The screenshot shows the 'Storage Settings' dialog box. On the right, the 'Adapter' is set to 'FileSystem'. Under 'Adapter Settings', the 'Show Connection String' checkbox is checked. The 'Connection' text area contains the string: `PATH=;AUDITDELETE=True;BUFFERSIZE=8192;SHREDONDELETE=False;USEMETA=False;`. Below the text area, a note reads: 'Provide adapter-specific connection attributes. Please refer to the adapter documentation for connection string details.'

Or, click the Show link next to the Advanced Adapter Settings to see the drop down field.

The screenshot shows the 'Storage Settings' dialog box. On the right, the 'Adapter' is set to 'FileSystem'. Under 'Adapter Settings', the 'Show Connection String' checkbox is unchecked. Below this, the 'Path' field is empty. Under 'Advanced Adapter Settings (-hide)', the 'Deletion Method' is set to 'Audit', 'Buffer Size' is set to '8192', and 'Support Metadata' is set to 'False'.

Buffer Size

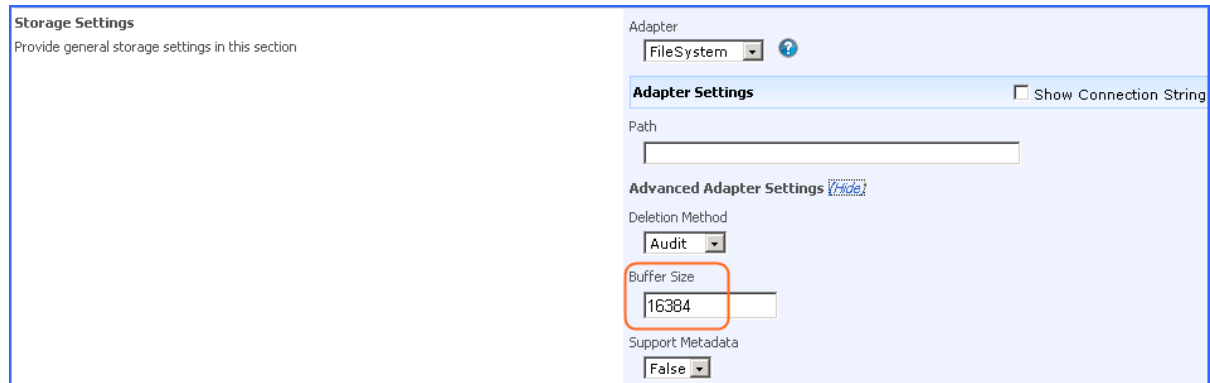
The Buffer Size option is used to override the Metalogix StoragePoint read/write buffer size default of 8192. The Metalogix StoragePoint default is tuned for maximum performance on most devices. The value can be modified if it is suspected that a different buffer size would be more optimal for a given device. Please be aware that it is recommended that you not change this setting and that increasing it does not necessarily increase performance. In fact, in many cases, increasing it will decrease performance.

This option is specified by appending `;BufferSize=xxxx` (where `xxxx` is the size to make the buffer) to the Connection string of a profile that uses the FileSystem adapter.

Click the Show Connection String checkbox to edit the string.

The screenshot shows the 'Storage Settings' dialog box. On the right, the 'Adapter' is set to 'FileSystem'. Under 'Adapter Settings', the 'Show Connection String' checkbox is checked. The 'Connection' text area contains the string: `PATH=;AUDITDELETE=True;BUFFERSIZE=16384;SHREDONDELETE=False;USEMETA=False;`. Below the text area, a note reads: 'Provide adapter-specific connection attributes. Please refer to the adapter documentation for connection string details.'

Or, click the Show link next to the Advanced Adapter Settings to see the text field.



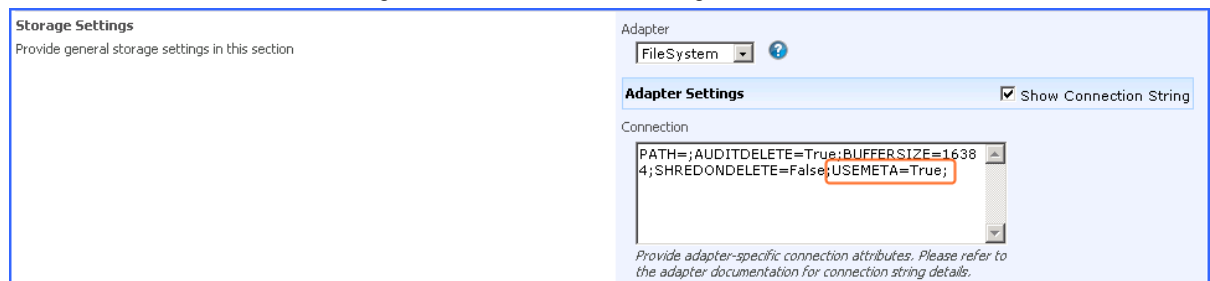
The screenshot shows the 'Storage Settings' dialog box. On the right, the 'Adapter' is set to 'FileSystem'. Below it, the 'Adapter Settings' section is expanded, showing a 'Path' field. Underneath, the 'Advanced Adapter Settings' section is visible, with a '(hide)' link. Within this section, the 'Deletion Method' is set to 'Audit'. The 'Buffer Size' field is highlighted with a red box and contains the value '16384'. The 'Support Metadata' field is set to 'False'.

Support Metadata

The Support Metadata option causes an additional file to be created for each BLOB written. This additional file will share the same name as the BLOB and include an extension of ".xml". It contains a snapshot of available SharePoint metadata. This metadata file will be created and populated on a "best effort" basis. The metadata snapshot file lives in the BLOB-store until the BLOB itself is deleted. At that time the xml file is also removed.

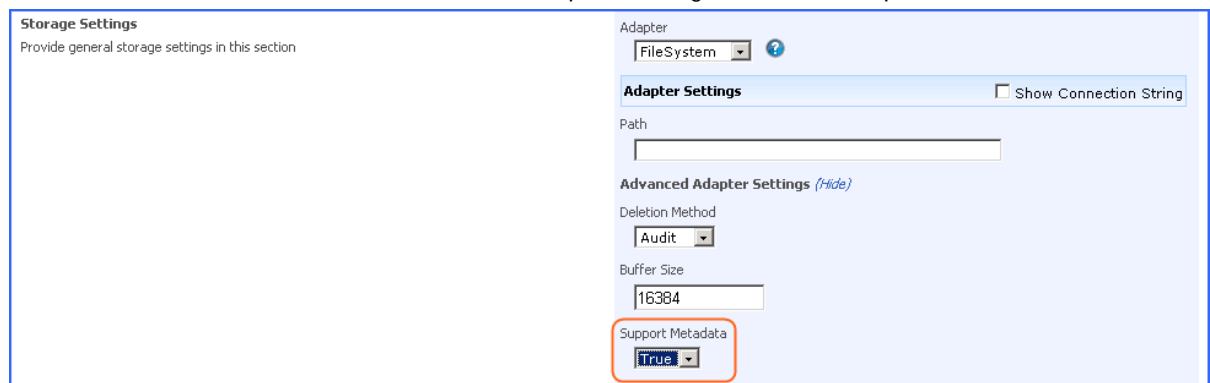
This option is turned on by appending ;UseMeta=True to the Connection string of a profile that uses the FileSystem adapter. This behavior is turned off by default and must be turned on explicitly if desired.

Click the Show Connection String checkbox to edit the string.



The screenshot shows the 'Storage Settings' dialog box with the 'Show Connection String' checkbox checked. The 'Connection' field contains the string: 'PATH=;AUDITDELETE=True;BUFFER SIZE=16384;SHREDONDELETE=False;USEMETA=True;'. The 'USEMETA=True;' part is highlighted with a red box. Below the field, there is a note: 'Provide adapter-specific connection attributes. Please refer to the adapter documentation for connection string details.'

Or, click the Show link next to the Advanced Adapter Settings to see the drop down fields.



The screenshot shows the 'Storage Settings' dialog box. The 'Adapter' is 'FileSystem'. The 'Adapter Settings' section is expanded. The 'Path' field is empty. The 'Advanced Adapter Settings' section is expanded, showing 'Deletion Method' as 'Audit' and 'Buffer Size' as '16384'. The 'Support Metadata' field is highlighted with a red box and is set to 'True'.

Please keep the following limitations in mind when using this feature:

- Enabling this option takes slightly more space in the BLOB-store in order to accommodate the metadata.
- Enabling this option may result in slightly longer times to perform BLOB writes and deletions.
- Metadata is written asynchronously compared to the actual BLOB contents. As a result there can be a lag between the commit of a BLOB and its associated metadata.
- This option is specific to the Metalogix StoragePoint FileSystem adapter. Please see the documentation of our other adapter(s) to find out if and how metadata is supported.

VerifyWrites

This option posts back to StoragePoint to validate that the BLOB was written to the endpoint. It is not part of the connection string by default, but can be added by editing the connection string only; there is no user interface for this option. If verbose logging is enabled, the logs may contain information such as 'Written file verified as present: <filename>.'

VERIFYWRITES=true;

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