

## **How to Upload and Download Files Pragmatically to Azure Blob Storage using VB.Net**

In this tutorial I'm going to show how to:

- Connect to Azure Storage
- List files/folders (CloudBlockBlob/CloudBlobDirectory) within an Azure File Storage
- Create a Shared Access Signature for a Blob
- Obtain Blob properties
- Read content from a Blob
- Write content to a Blob
- Upload a Blob to Azure File Storage
- Delete a Blob
- Rename/Move a Blob
- Download a Blob

Source code for this Project can be found here:

<https://github.com/patricksameerajayalath/Azure.FileStorage>

You can find the Part 1 of this tutorial here:

<https://github.com/patricksameerajayalath/AzureTutorials/blob/master/Azure%20File%20Storage%20Overview.pdf>

At the end of this tutorial we will be ending up a UI like bellow.

Application name

Home

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Container name: app-data

Directory path: /app-data/upload\_docs

Type	Name	Path	Absolute Path	URL	File Content	File Properties
File	address.txt	upload_docs/address.txt	/app-data/upload_docs/address.txt	<a href="#">View File</a>	Melbourne, Australia	File size: 20 bytes Last modified: 17/04/2019 4:21:12 AM +00:00
Folder	images	upload_docs/images/	/app-data/upload_docs/images/	-	-	-
File	name.txt	upload_docs/name.txt	/app-data/upload_docs/name.txt	<a href="#">View File</a>	Patrick Sameera	File size: 15 bytes Last modified: 17/04/2019 4:21:12 AM +00:00
File	phone.txt	upload_docs/phone.txt	/app-data/upload_docs/phone.txt	<a href="#">View File</a>	+61 000-000-000	File size: 15 bytes Last modified: 17/04/2019 4:21:12 AM +00:00
File	test.txt	upload_docs/test.txt	/app-data/upload_docs/test.txt	<a href="#">View File</a>	Hello world !!!	File size: 17 bytes Last modified: 10/05/2019 12:53:40 AM +00:00

Upload Functionality:

Choose File

No file chosen

Upload File

Write To File Functionality:

File name:

test.txt

Content:

Hello world !!!

Write To File

Delete File Functionality:

Upload Functionality:

Choose File

No file chosen

Upload File

Write To File Functionality:

File name:

test.txt

Content:

Hello world !!

Write To File

Delete File Functionality:

File name:

test.txt

Delete File

Rename File Functionality:

Current file name:

test.txt

New file name:

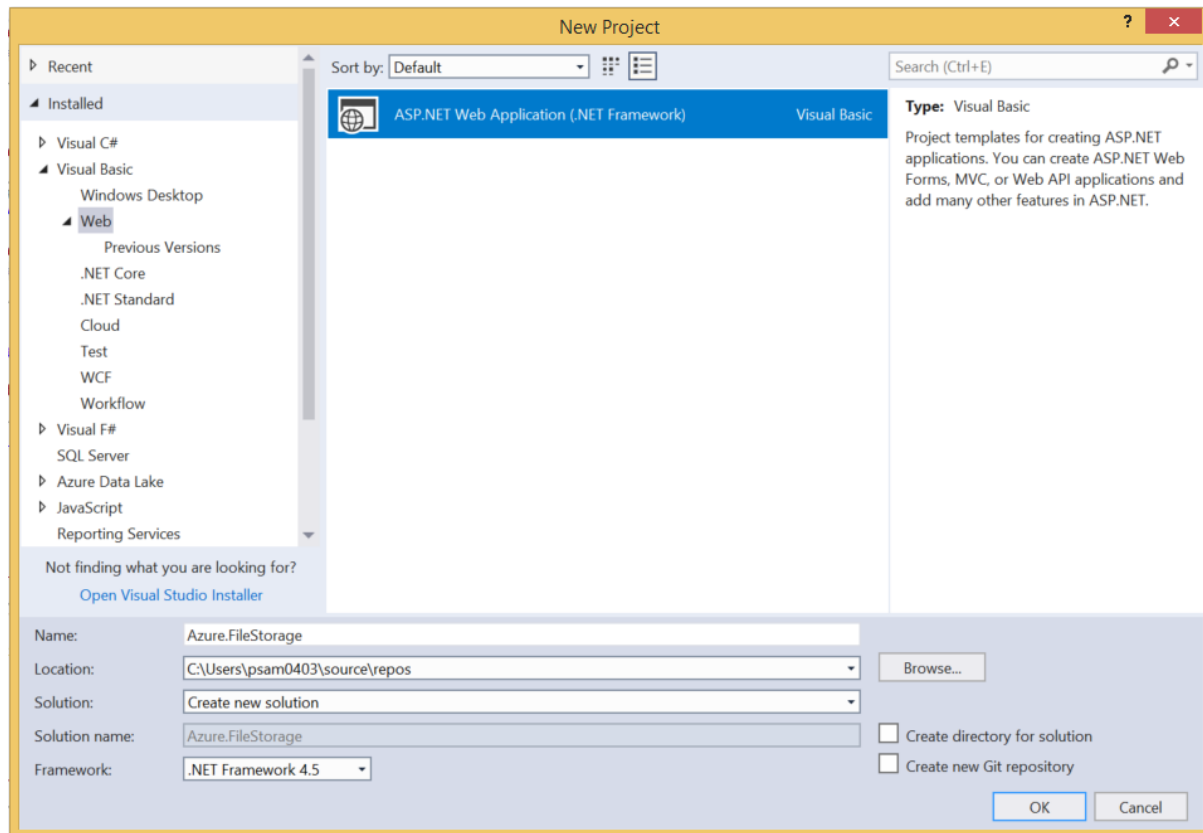
test123.txt

Rename File

© 2019 - My ASP.NET Application

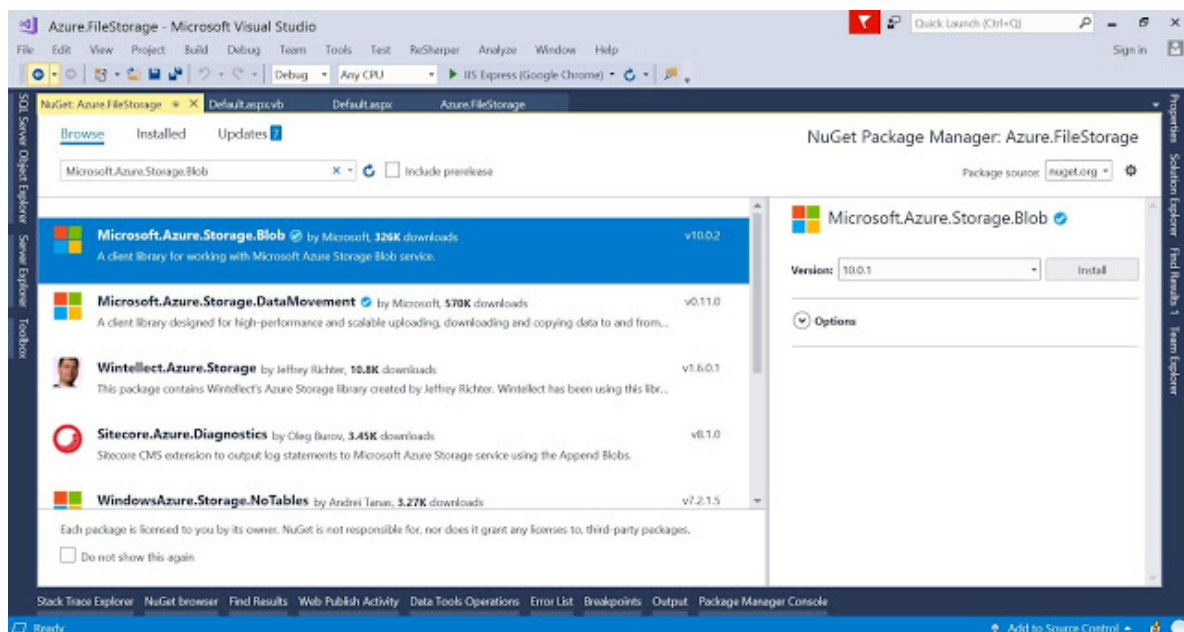
To get start we will be creating an ASP.Net Web Project.

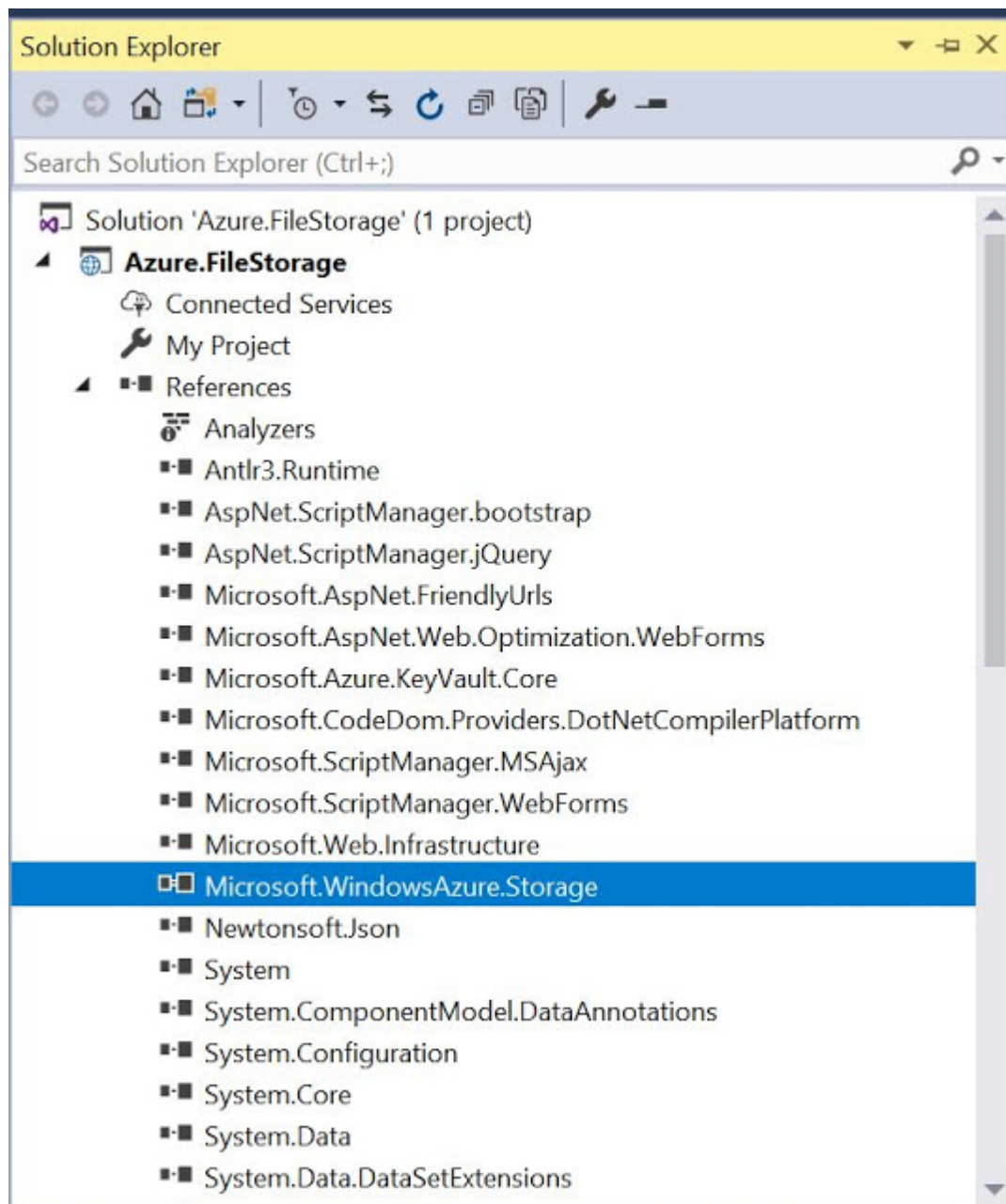
- Language – VB.Net



In the Solution Explorer, right click on the Project and select Manage NuGet Packages.

Under Browse tab Search for *Microsoft.Azure.Stroage.Blob* and on the results Select it and Click Install.





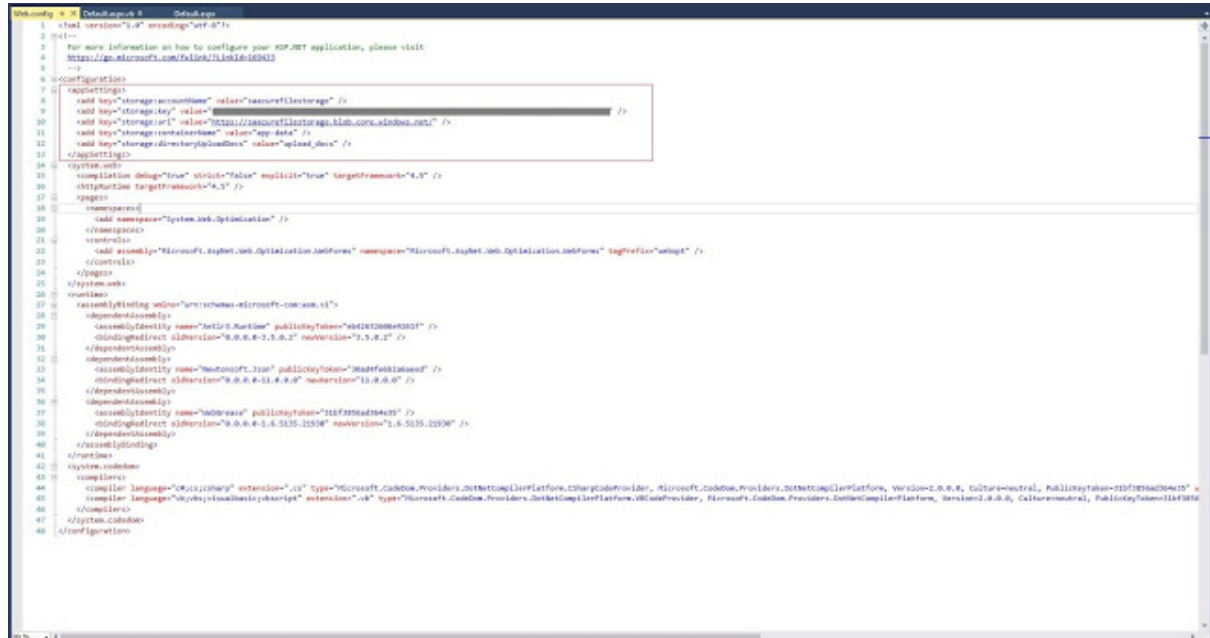
<https://github.com/patricksameerajayalath/AzureTutorials/blob/master/Azure%20File%20Storage%20Overview.pdf>



We will be storing all Storage Account related information in Web.config.

Web.config

<https://github.com/patricksameerajayalath/Azure.FileStorage/blob/master/Web.config>

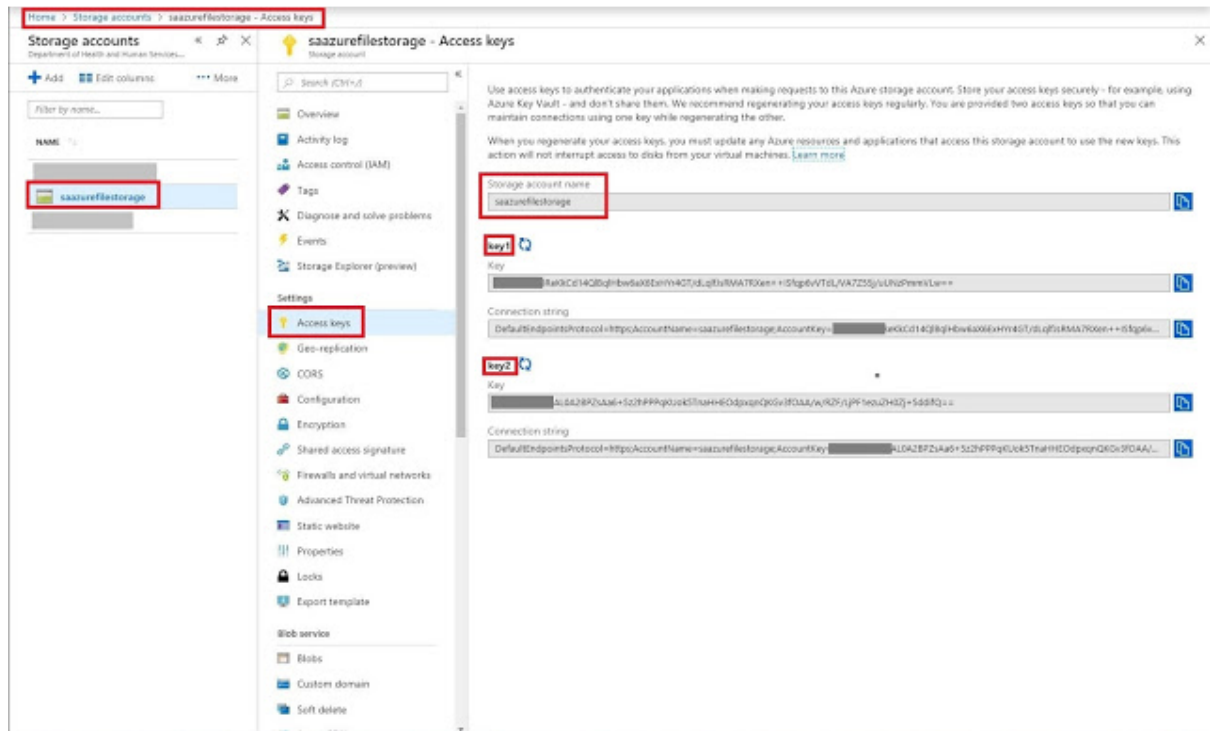


```
1 <?xml version="1.0" encoding="utf-8"?>
2 <!--
3 For more information on how to configure your ASP.NET application, please visit
4 https://go.microsoft.com/fwlink/?linkid=89463
5 -->
6 <configuration>
7 <appSettings>
8 <add key="storage:accountName" value="saazurefilestorage" />
9 <add key="storage:key" value="*****" />
10 <add key="storage:uri" value="https://saazurefilestorage.blob.core.windows.net/" />
11 <add key="storage:containerName" value="app-data" />
12 <add key="storage:directoryUploadDocs" value="upload_docs" />
13 </appSettings>
14 <system.web>
15 <compilation debug="true" strict="false" explicit="true" targetFramework="4.5" />
16 <authentication targetFramework="4.5" />
17 </system.web>
18 <system.web>
19 <compilation>
20 <assemblies>
21 <add assembly="System.Web.Optimization" />
22 </assemblies>
23 <add assembly="Microsoft.AspNet.Web.Optimization.Abstractions" namespace="Microsoft.AspNet.Web.Optimization.Abstractions" tagPrefix="webopt" />
24 </add>
25 </compilation>
26 </system.web>
27 <runtime>
28 <assemblyBinding xmlns="urn:schemas-microsoft-com:asm.v1">
29 <dependentAssembly>
30 <assemblyIdentity name="AntiX.X.Runtime" publicKeyToken="a4d81200a9202f" />
31 <bindingRedirect oldVersion="9.0.0.0-9.5.0.0" newVersion="9.5.0.0" />
32 </dependentAssembly>
33 <assemblyIdentity name="Microsoft.IIS" publicKeyToken="31d6f8a4d4e4" />
34 <bindingRedirect oldVersion="9.0.0.0-9.5.0.0" newVersion="9.5.0.0" />
35 </dependentAssembly>
36 <assemblyIdentity name="Microsoft" publicKeyToken="31d6f8a4d4e4" />
37 <bindingRedirect oldVersion="9.0.0.0-9.5.0.0" newVersion="9.5.0.0" />
38 </dependentAssembly>
39 </assemblyBinding>
40 </runtime>
41 </system.web>
42 <system.web>
43 <compilation>
44 <compiler language="c#;cs;vb;vbs;fs;jscript" extension=".cs" type="Microsoft.CodeDom.Providers.DotNetCompilerPlatform, Microsoft.CodeDom.Providers.DotNetCompilerPlatform, Version=2.0.0.0, Culture=neutral, PublicKeyToken=31d6f8a4d4e4" />
45 <compiler language="vb;vbs;jscript;jscript" extension=".vb" type="Microsoft.CodeDom.Providers.DotNetCompilerPlatform, Microsoft.CodeDom.Providers.DotNetCompilerPlatform, Version=2.0.0.0, Culture=neutral, PublicKeyToken=31d6f8a4d4e4" />
46 </compiler>
47 </system.web>
48 </configuration>
```

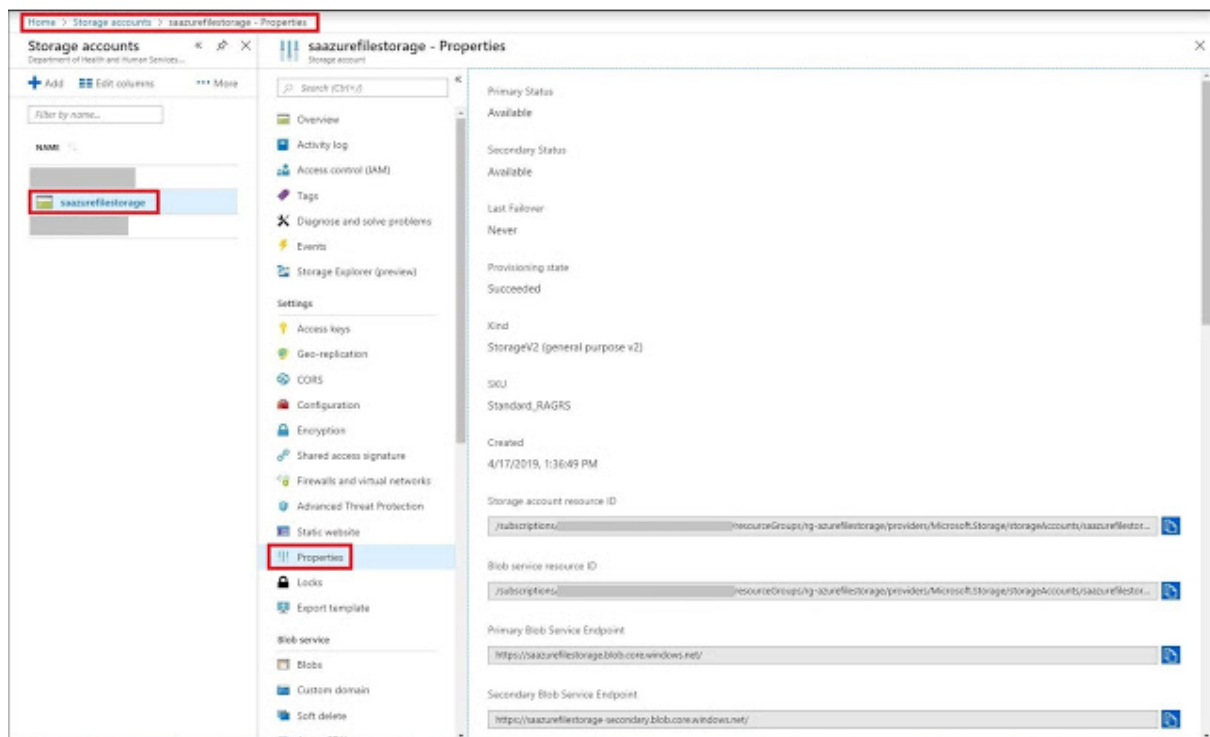
<https://github.com/patricksameerajayalath/Azure.FileStorage/blob/master/Web.config#L5>

```
6 <configuration>
7 <appSettings>
8 <add key="storage:accountName" value="saazurefilestorage" />
9 <add key="storage:key" value="**your storage security key goes here**" />
10 <add key="storage:uri" value="https://saazurefilestorage.blob.core.windows.net/" />
11 <add key="storage:containerName" value="app-data" />
12 <add key="storage:directoryUploadDocs" value="upload_docs" />
13 </appSettings>
```

You can get the connection string from "Access Keys" tab.



You can get the Blob URL from "Properties" tab.





## Default.aspx

<https://github.com/patricksameerajayalath/Azure.FileStorage/blob/master/Default.aspx>

```
Web.config Default.aspx.vb Default.aspx
1 <%@ Page Title="New Page" Language="VB" MasterPageFile="~/Site.Master" AutoEventWireup="true" CodeBehind="Default.aspx.vb" Inherits="Azure.FileStorage.Default" %>
2
3 <asp:Content ID="BodyContent" ContentPlaceHolderID="MainContent" runat="server">
4
5     <div />
6
7     <asp:Label ID="Label1" runat="server" CssClass="label label-primary"><asp:Label>
8
9     </div>
10
11     <asp:Label ID="Label2" runat="server" CssClass="label label-primary"><asp:Label>
12
13     </div>
14
15     <div class="row">
16
17         <asp:Label ID="Label3" runat="server"><asp:Label>
18
19         </div>
20
21     </div>
22
23     <asp:Label ID="Label4" runat="server" CssClass="label label-danger"><asp:Label>
24
25     </div>
26
27     <div>
28
29         <asp:Label ID="Label5" runat="server"><asp:Label>
30
31         </div>
32
33     </div>
34
35     <div>
36
37         <asp:Label ID="Label6" runat="server"><asp:Label>
38
39         </div>
40
41     </div>
42
43     <div>
44
45         <asp:Label ID="Label7" runat="server"><asp:Label>
46
47         </div>
48
49     </div>
50
51     <div>
52
53         <asp:Label ID="Label8" runat="server"><asp:Label>
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55         </div>
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57     </div>
58
59     <div>
60
61         <asp:Label ID="Label9" runat="server"><asp:Label>
62
63         </div>
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65     </div>
66
67     <div>
68
69         <asp:Label ID="Label10" runat="server"><asp:Label>
70
71         </div>
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73     </div>
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75     <div>
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77         <asp:Label ID="Label11" runat="server"><asp:Label>
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83     <div>
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85         <asp:Label ID="Label12" runat="server"><asp:Label>
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93         <asp:Label ID="Label13" runat="server"><asp:Label>
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99     <div>
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101         <asp:Label ID="Label14" runat="server"><asp:Label>
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108
109         <asp:Label ID="Label15" runat="server"><asp:Label>
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111         </div>
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113     </div>
114
115     <div>
116
117         <asp:Label ID="Label16" runat="server"><asp:Label>
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119         </div>
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125         <asp:Label ID="Label17" runat="server"><asp:Label>
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133         <asp:Label ID="Label18" runat="server"><asp:Label>
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141         <asp:Label ID="Label19" runat="server"><asp:Label>
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143         </div>
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145     </div>
146
147     <div>
148
149         <asp:Label ID="Label20" runat="server"><asp:Label>
150
151         </div>
152
153     </div>
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155     <div>
156
157         <asp:Label ID="Label21" runat="server"><asp:Label>
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165         <asp:Label ID="Label22" runat="server"><asp:Label>
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173         <asp:Label ID="Label23" runat="server"><asp:Label>
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181         <asp:Label ID="Label24" runat="server"><asp:Label>
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189         <asp:Label ID="Label25" runat="server"><asp:Label>
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195     <div>
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197         <asp:Label ID="Label26" runat="server"><asp:Label>
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235     <div>
236
237         <asp:Label ID="Label31" runat="server"><asp:Label>
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245         <asp:Label ID="Label32" runat="server"><asp:Label>
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253         <asp:Label ID="Label33" runat="server"><asp:Label>
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259     <div>
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261         <asp:Label ID="Label34" runat="server"><asp:Label>
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501         <asp:Label ID="Label64" runat="server"><asp:Label>
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541         <asp:Label ID="Label69" runat="server"><asp:Label>
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547     <div>
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549         <asp:Label ID="Label70" runat="server"><asp:Label>
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551         </div>
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555     <div>
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557         <asp:Label ID="Label71" runat="server"><asp:Label>
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597         <asp:Label ID="Label76" runat="server"><asp:Label>
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605         <asp:Label ID="Label77" runat="server"><asp:Label>
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611     <div>
612
613         <asp:Label ID="Label78" runat="server"><asp:Label>
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629         <asp:Label ID="Label80" runat="server"><asp:Label>
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637         <asp:Label ID="Label81" runat="server"><asp:Label>
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639         </div>
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641     </div>
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643     <div>
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645         <asp:Label ID="Label82" runat="server"><asp:Label>
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653         <asp:Label ID="Label83" runat="server"><asp:Label>
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661         <asp:Label ID="Label84" runat="server"><asp:Label>
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669         <asp:Label ID="Label85" runat="server"><asp:Label>
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674
675     <div>
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677         <asp:Label ID="Label86" runat="server"><asp:Label>
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679         </div>
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683     <div>
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685         <asp:Label ID="Label87" runat="server"><asp:Label>
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693         <asp:Label ID="Label88" runat="server"><asp:Label>
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701         <asp:Label ID="Label89" runat="server"><asp:Label>
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709         <asp:Label ID="Label90" runat="server"><asp:Label>
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717         <asp:Label ID="Label91" runat="server"><asp:Label>
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725         <asp:Label ID="Label92" runat="server"><asp:Label>
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729     </div>
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731     <div>
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733         <asp:Label ID="Label93" runat="server"><asp:Label>
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735         </div>
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737     </div>
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739     <div>
740
741         <asp:Label ID="Label94" runat="server"><asp:Label>
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743         </div>
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745     </div>
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747     <div>
748
749         <asp:Label ID="Label95" runat="server"><asp:Label>
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751         </div>
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753     </div>
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755     <div>
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757         <asp:Label ID="Label96" runat="server"><asp:Label>
758
759         </div>
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762
763     <div>
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765         <asp:Label ID="Label97" runat="server"><asp:Label>
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767         </div>
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769     </div>
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771     <div>
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773         <asp:Label ID="Label98" runat="server"><asp:Label>
774
775         </div>
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779     <div>
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781         <asp:Label ID="Label99" runat="server"><asp:Label>
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783         </div>
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787     <div>
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789         <asp:Label ID="Label100" runat="server"><asp:Label>
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791         </div>
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793     </div>
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795     <div>
796
797         <asp:Label ID="Label101" runat="server"><asp:Label>
798
799         </div>
800
801     </div>
802
803     <div>
804
805         <asp:Label ID="Label102" runat="server"><asp:Label>
806
807         </div>
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809     </div>
810
811     <div>
812
813         <asp:Label ID="Label103" runat="server"><asp:Label>
814
815         </div>
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817     </div>
818
819     <div>
820
821         <asp:Label ID="Label104" runat="server"><asp:Label>
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823         </div>
824
825     </div>
826
827     <div>
828
829         <asp:Label ID="Label105" runat="server"><asp:Label>
830
831         </div>
832
833     </div>
834
835     <div>
836
837         <asp:Label ID="Label106" runat="server"><asp:Label>
838
839         </div>
840
841     </div>
842
843     <div>
844
845         <asp:Label ID="Label107" runat="server"><asp:Label>
846
847         </div>
848
849     </div>
850
851     <div>
852
853         <asp:Label ID="Label108" runat="server"><asp:Label>
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855         </div>
856
857     </div>
858
859     <div>
860
861         <asp:Label ID="Label109" runat="server"><asp:Label>
862
863         </div>
864
865     </div>
866
867     <div>
868
869         <asp:Label ID="Label110" runat="server"><asp:Label>
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871         </div>
872
873     </div>
874
875     <div>
876
877         <asp:Label ID="Label111" runat="server"><asp:Label>
878
879         </div>
880
881     </div>
882
883     <div>
884
885         <asp:Label ID="Label112" runat="server"><asp:Label>
886
887         </div>
888
889     </div>
890
891     <div>
892
893         <asp:Label ID="Label113" runat="server"><asp:Label>
894
895         </div>
896
897     </div>
898
899     <div>
900
901         <asp:Label ID="Label114" runat="server"><asp:Label>
902
903         </div>
904
905     </div>
906
907     <div>
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909         <asp:Label ID="Label115" runat="server"><asp:Label>
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911         </div>
912
913     </div>
914
915     <div>
916
917         <asp:Label ID="Label116" runat="server"><asp:Label>
918
919         </div>
920
921     </div>
922
923     <div>
924
925         <asp:Label ID="Label117" runat="server"><asp:Label>
926
927         </div>
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929     </div>
930
931     <div>
932
933         <asp:Label ID="Label118" runat="server"><asp:Label>
934
935         </div>
936
937     </div>
938
939     <div>
940
941         <asp:Label ID="Label119" runat="server"><asp:Label>
942
943         </div>
944
945     </div>
946
947     <div>
948
949         <asp:Label ID="Label120" runat="server"><asp:Label>
950
951         </div>
952
953     </div>
954
955     <div>
956
957         <asp:Label ID="Label121" runat="server"><asp:Label>
958
959         </div>
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961     </div>
962
963     <div>
964
965         <asp:Label ID="Label122" runat="server"><asp:Label>
966
967         </div>
968
969     </div>
970
971     <div>
972
973         <asp:Label ID="Label123" runat="server"><asp:Label>
974
975         </div>
976
977     </div>
978
979     <div>
980
981         <asp:Label ID="Label124" runat="server"><asp:Label>
982
983         </div>
984
985     </div>
986
987     <div>
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989         <asp:Label ID="Label125" runat="server"><asp:Label>
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991         </div>
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993     </div>
994
995     <div>
996
997         <asp:Label ID="Label126" runat="server"><asp:Label>
998
999         </div>
1000
1001     </div>
1002
1003     <div>
1004
1005         <asp:Label ID="Label127" runat="server"><asp:Label>
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1007         </div>
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1009     </div>
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1011     <div>
1012
1013         <asp:Label ID="Label128" runat="server"><asp:Label>
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1015         </div>
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1017     </div>
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1019     <div>
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1021         <asp:Label ID="Label129" runat="server"><asp:Label>
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1023         </div>
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1027     <div>
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1029         <asp:Label ID="Label130" runat="server"><asp:Label>
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1031         </div>
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1033     </div>
1034
1035     <div>
1036
1037         <asp:Label ID="Label131" runat="server"><asp:Label>
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1039         </div>
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1041     </div>
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1043     <div>
1044
1045         <asp:Label ID="Label132" runat="server"><asp:Label>
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1047         </div>
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1049     </div>
1050
1051     <div>
1052
1053         <asp:Label ID="Label133" runat="server"><asp:Label>
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1055         </div>
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1057     </div>
1058
1059     <div>
1060
1061         <asp:Label ID="Label134" runat="server"><asp:Label>
1062
1063         </div>
1064
1065     </div>
1066
1067     <div>
1068
1069         <asp:Label ID="Label135" runat="server"><asp:Label>
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1071         </div>
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1073     </div>
1074
1075     <div>
1076
1077         <asp:Label ID="Label136" runat="server"><asp:Label>
1078
1079         </div>
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1081     </div>
1082
1083     <div>
1084
1085         <asp:Label ID="Label137" runat="server"><asp:Label>
1086
1087         </div>
1088
1089     </div>
1090
1091     <div>
1092
1093         <asp:Label ID="Label138" runat="server"><asp:Label>
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1095         </div>
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1097     </div>
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1099     <div>
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1101         <asp:Label ID="Label139" runat="server"><asp:Label>
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1103         </div>
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1105     </div>
1106
1107     <div>
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1109         <asp:Label ID="Label140" runat="server"><asp:Label>
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1111         </div>
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1113     </div>
1114
1115     <div>
1116
1117         <asp:Label ID="Label141" runat="server"><asp:Label>
1118
1119         </div>
1120
1121     </div>
1122
1123     <div>
1124
1125         <asp:Label ID="Label142" runat="server"><asp:Label>
1126
1127         </div>
1128
1129     </div>
1130
1131     <div>
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1133         <asp:Label ID="Label143" runat="server"><asp:Label>
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1135         </div>
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1137     </div>
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1139     <div>
1140
1141         <asp:Label ID="Label144" runat="server"><asp:Label>
1142
1143         </div>
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1145     </div>
1146
1147     <div>
1148
1149         <asp:Label ID="Label145" runat="server"><asp:Label>
1150
1151         </div>
1152
1153     </div>
1154
1155     <div>
1156
1157         <asp:Label ID="Label146" runat="server"><asp:Label>
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1159         </div>
1160
1161     </div>
1162
1163     <div>
1164
1165         <asp:Label ID="Label147" runat="server"><asp:Label>
1166
1167         </div>
1168
1169     </div>
1170
1171     <div>
1172
1173         <asp:Label ID="Label148" runat="server"><asp:Label>
1174
1175         </div>
1176
1177     </div>
1178
1179     <div>
1180
1181         <asp:Label ID="Label149" runat="server"><asp:Label>
1182
1183         </div>
1184
1185     </div>
1186
1187     <div>
1188
1189         <asp:Label ID="Label150" runat="server"><asp:Label>
1190
1191         </div>
1192
1193     </div>
1194
1195     <div>
1196
1197         <asp:Label ID="Label151" runat="server"><asp:Label>
119
```

## Code Snippets:

<https://github.com/patricksameerajayalath/Azure.FileStorage/blob/master/Default.aspx.vb>

### Code 01 - Connect to Azure Storage

Bellow configurations will be read from web.config.

- File Storage Account name – [key="storage:accountName"]
- File Storage key – [key="storage:key"]
- File Storage URI – [key="storage:uri"]
- File Storage Container name – [key="storage:containerName"]
- File Storage directory – [key="storage:directoryUploadDocs"]

<https://github.com/patricksameerajayalath/Azure.FileStorage/blob/master/Web.config#L5>

```
6 <configuration>
7 <appSettings>
8 <add key="storage:accountName" value="saazurefilestorage" />
9 <add key="storage:key" value="**your storage security key goes here**" />
10 <add key="storage:uri" value="https://saazurefilestorage.blob.core.windows.net/" />
11 <add key="storage:containerName" value="app-data" />
12 <add key="storage:directoryUploadDocs" value="upload_docs" />
13 </appSettings>
```

Connect to Azure File Storage by retrieving the config values from we.b.config

<https://github.com/patricksameerajayalath/Azure.FileStorage/blob/master/Default.aspx.vb#L16>

```
16 Dim blobContainer As CloudBlobContainer = GetStorageContainerReference()
17
18 ' <add key="storage:directoryUploadDocs" value="upload_docs" />
19 Dim directoryUploadDocs As String = ConfigurationManager.AppSettings("storage:directoryUploadDocs")
20 Dim blobDirectoryUploadDocs As CloudBlobDirectory = blobContainer.GetDirectoryReference(directoryUploadDocs)
21 Dim blockBlobUploadDocs As CloudBlockBlob = blobContainer.GetBlockBlobReference(directoryUploadDocs)
```

<https://github.com/patricksameerajayalath/Azure.FileStorage/blob/master/Default.aspx.vb#L151>

```
151 Private Function GetStorageContainerReference() As CloudBlobContainer
152
153 Dim credentials As StorageCredentials = New StorageCredentials(ConfigurationManager.AppSettings("storage:accountName"), Configurati
154 Dim blobClient As CloudBlobClient = New CloudBlobClient(New Uri(ConfigurationManager.AppSettings("storage:uri")), credentials)
155
156 Dim containerName As String = ConfigurationManager.AppSettings("storage:containerName")
157 Dim blobContainer As CloudBlobContainer = blobClient.GetContainerReference(containerName)
158
159 Return blobContainer
160
161 End Function
```

## Code 02 - List files/folders (CloudBlockBlob/CloudBlobDirectory) within an Azure File Storage

On *Page\_Load* we have called *ShowDocumentList()* function. It will read configuration from web.config and connect to Azure File Storage and list all the Blobs.

<https://github.com/patricksameerajayalath/Azure.FileStorage/blob/master/Default.aspx.vb#L8>

```
8      Protected Sub Page_Load(ByVal sender As Object, ByVal e As EventArgs) Handles Me.Load
9
10         ShowDocumentList()
11
12     End Sub
13
14     Private Sub ShowDocumentList()
15
16         Dim blobContainer As CloudBlobContainer = GetStorageContainerReference()
17
18         '<add key="storage:directoryUploadDocs" value="upload_docs" />
19         Dim directoryUploadDocs As String = ConfigurationManager.AppSettings("storage:directoryUploadDocs")
20         Dim blobDirectoryUploadDocs As CloudBlobDirectory = blobContainer.GetDirectoryReference(directoryUploadDocs)
21         Dim blockBlobUploadDocs As CloudBlockBlob = blobContainer.GetBlockBlobReference(directoryUploadDocs)
22
23         Dim blobList As IEnumerable(Of IListBlobItem) = blobDirectoryUploadDocs.ListBlobs()
24
25     End Sub
```

Read list of Blobs:

<https://github.com/patricksameerajayalath/Azure.FileStorage/blob/master/Default.aspx.vb#L23>

```
23     Dim blobList As IEnumerable(Of IListBlobItem) = blobDirectoryUploadDocs.ListBlobs()
```

Iterate through Blobs:

<https://github.com/patricksameerajayalath/Azure.FileStorage/blob/master/Default.aspx.vb#L42>

```
42     For Each blobItem As IListBlobItem In blobList
43
44         If blobItem.GetType() = GetType(CloudBlockBlob) Then
45
46             Dim blob As CloudBlockBlob = DirectCast(blobItem, CloudBlockBlob)
47
48             documentList.Text = documentList.Text & "<tr>"
49
50             ' blob type
51             documentList.Text = documentList.Text & "<td>File</td>"
```

Iterate through Directories:

<https://github.com/patricksameerajayalath/Azure.FileStorage/blob/master/Default.aspx.vb#L100>

```
100         Else If blobItem.GetType() = GetType(CloudBlobDirectory) Then
101
102             Dim blob As CloudBlobDirectory = DirectCast(blobItem, CloudBlobDirectory)
103
104             documentList.Text = documentList.Text & "<tr>"
```

### Code 03 - Write content to a Blob

Write content to Blob:

<https://github.com/patricksameerajayalath/Azure.FileStorage/blob/master/Default.aspx.vb#L238>

```
238 Private Sub WriteToFile_Click(ByVal sender As Object, ByVal e As System.EventArgs) Handles WriteToFile.Click
239
240     Dim selectedFileName As String = WriteToFileName.Text
241     Dim content As String = FileContent.Text
242
243     Dim blobContainer As CloudBlobContainer = GetStorageContainerReference()
244
245     '<add key="storage:directoryUploadDocs" value="upload_docs" />
246     Dim directoryUploadDocs As String = ConfigurationManager.AppSettings("storage:directoryUploadDocs")
247     Dim blobDirectoryUploadDocs As CloudBlobDirectory = blobContainer.GetDirectoryReference(directoryUploadDocs)
248     Dim blockBlobUploadDocs As CloudBlockBlob = blobContainer.GetBlockBlobReference(directoryUploadDocs)
249
250     Dim selectedBlob As CloudBlockBlob = blobDirectoryUploadDocs.GetBlockBlobReference(selectedFileName)
251
252     If (selectedBlob.Exists()) Then
253
254         Try
255
256             Dim streamWriter As StreamWriter = New StreamWriter(selectedBlob.OpenWrite())
257
258             streamWriter.Write(content)
259             streamWriter.WriteLine()
260
261             streamWriter.Close()
262
263             ShowDocumentList()
264
265             Message.Text = ""
266
267         Catch ex As Exception
268
269             Message.Text = "Error writing to file " + selectedFileName + "<br>" + err.ToString()
270
271         End Try
272
273     Else
274
275         Message.Text = "File " + selectedFileName + " doesn't exists. Content cannot be written to it."
276
277     End If
278
279 End Sub
```

## Code 04 - Create a Shared Access Signature for a Blob

Generate *SharedAccessBlobPolicy* which has:

- Read access
- Expiry time of 20 minutes

<https://github.com/patricksameerajayalath/Azure.FileStorage/blob/master/Default.aspx.vb#L69>

```
69         ' blob url
70         Dim policy As new SharedAccessBlobPolicy
71         policy.Permissions = SharedAccessBlobPermissions.Read
72         policy.SharedAccessExpiryTime = DateTimeOffset.UtcNow.AddMinutes(20)
73
74         Dim blobUri as String = blob.Uri.ToString() + blob.GetSharedAccessSignature(policy)
75
76         documentList.Text = documentList.Text & "<td>"
77         documentList.Text = documentList.Text & "<a href='" + blobUri + "'>"
78         documentList.Text = documentList.Text & "View File"
79         documentList.Text = documentList.Text & "</a>"
80         documentList.Text = documentList.Text & "</td>"
```

## Code 05 - Obtain Blob properties

Retrieve Blob properties like:

- Blob size
- Blob last modified date

<https://github.com/patricksameerajayalath/Azure.FileStorage/blob/master/Default.aspx.vb#L92>

```
92         ' blob properties
93         documentList.Text = documentList.Text & "<td>"
94         documentList.Text = documentList.Text & "File size: " & String.Format("{0:#,###}", blob.Properties.Length) & " bytes <b
95         documentList.Text = documentList.Text & "Last modified: " & blob.Properties.LastModified.ToString
96         documentList.Text = documentList.Text & "</td>"
```

## Code 06 - Upload a Blob to Azure File Storage

Upload a Blob with:

- Check if the Blob already exists
- Upload the Blob as an *InputStream*

<https://github.com/patricksameerajayalath/Azure.FileStorage/blob/master/Default.aspx.vb#L163>

```
163 Private Sub AddFile_Click(ByVal sender As Object, ByVal e As System.EventArgs) Handles AddFile.Click
164
165     If Page.IsPostBack = True Then
166
167         Dim blobContainer As CloudBlobContainer = GetStorageContainerReference()
168
169         '<add key="storage:directoryUploadDocs" value="upload_docs" />
170         Dim directoryUploadDocs As String = ConfigurationManager.AppSettings("storage:directoryUploadDocs")
171         Dim blobDirectoryUploadDocs As CloudBlobDirectory = blobContainer.GetDirectoryReference(directoryUploadDocs)
172         Dim blockBlobUploadDocs As CloudBlockBlob = blobContainer.GetBlockBlobReference(directoryUploadDocs)
173
174         Dim fileName As String = Path.GetFileName(FindFile.PostedFile.FileName)
175
176         Dim selectedBlob As CloudBlockBlob = blobDirectoryUploadDocs.GetBlockBlobReference(fileName)
177
178         If (selectedBlob.Exists()) Then
179
180             Message.Text = "File " + fileName + " already exists."
181
182         Else
183
184             Try
185
186                 Dim sourceStream As Stream = FindFile.PostedFile.InputStream
187                 sourceStream.Position = 0
188
189                 dim cloudBlob as CloudBlockBlob = blobDirectoryUploadDocs.GetBlockBlobReference(fileName)
190
191                 cloudBlob.UploadFromStream(FindFile.PostedFile.InputStream)
192
193                 ShowDocumentList()
194
195                 Message.Text = ""
196
197             Catch err As Exception
198
199                 Message.Text = "Error saving file " + fileName + "<br>" + err.ToString()
200
201             End Try
202
203         End If
204
205     End If
206
207 End Sub
```

## Code 07 - Read content from a Blob

Read Blob content using *StreamReader* and Writes to a *TextArea*.

<https://github.com/patricksameerajayalath/Azure.FileStorage/blob/master/Default.aspx.vb#L82>

```
82         ' blob content
83         Dim blockBlobFile As CloudBlockBlob = blobDirectoryUploadDocs.GetBlockBlobReference(fileName)
84         Dim streamReader As New StreamReader(blockBlobFile.OpenRead())
85
86         documentList.Text = documentList.Text & "<td>"
87         documentList.Text = documentList.Text & "<textarea cols='20' rows='2'>"
88         documentList.Text = documentList.Text & streamReader.ReadToEnd()
89         documentList.Text = documentList.Text & "</textarea>"
90         documentList.Text = documentList.Text & "</td>"
91     End Sub
```

## Code 08 - Delete a Blob

Delete a Blob with:

- Check if the Blob already exists
- Delete Blob

<https://github.com/patricksameerajayalath/Azure.FileStorage/blob/master/Default.aspx.vb#L209>

```
209     Private Sub DeleteFile_Click(ByVal sender As Object, ByVal e As System.EventArgs) Handles DeleteFile.Click
210
211         Dim selectedFileName As String = DeleteFileName.Text
212
213         Dim blobContainer As CloudBlobContainer = GetStorageContainerReference()
214
215         '<add key="storage:directoryUploadDocs" value="upload_docs" />
216         Dim directoryUploadDocs As String = ConfigurationManager.AppSettings("storage:directoryUploadDocs")
217         Dim blobDirectoryUploadDocs As CloudBlobDirectory = blobContainer.GetDirectoryReference(directoryUploadDocs)
218         Dim blockBlobUploadDocs As CloudBlockBlob = blobContainer.GetBlockBlobReference(directoryUploadDocs)
219
220         Dim selectedBlob As CloudBlockBlob = blobDirectoryUploadDocs.GetBlockBlobReference(selectedFileName)
221
222         If (selectedBlob.Exists()) Then
223
224             selectedBlob.Delete()
225
226             ShowDocumentList()
227
228             Message.Text = ""
229
230         Else
231
232             Message.Text = "File " + selectedFileName + " cannot be deleted. It doesn't exists."
233
234         End If
235
236     End Sub
237
```

## Code 09 - Rename/Move a Blob

Rename functionality:

- First create a new file copy using existing old file
- Next delete the existing old file

<https://github.com/patricksameerajayalath/Azure.FileStorage/blob/master/Default.aspx.vb#L281>

```
281 Private Sub RenameFile_Click(ByVal sender As Object, ByVal e As System.EventArgs) Handles RenameFile.Click
282
283     Dim oldName As String = RenameFileName.Text
284     Dim newName As String = NewFileName.Text
285
286     Dim blobContainer As CloudBlobContainer = GetStorageContainerReference()
287
288     '<add key="storage:directoryUploadDocs" value="upload_docs" />
289     Dim directoryUploadDocs As String = ConfigurationManager.AppSettings("storage:directoryUploadDocs")
290     Dim blobDirectoryUploadDocs As CloudBlobDirectory = blobContainer.GetDirectoryReference(directoryUploadDocs)
291     Dim blockBlobUploadDocs As CloudBlockBlob = blobContainer.GetBlockBlobReference(directoryUploadDocs)
292
293     Dim selectedBlobOld As CloudBlockBlob = blobDirectoryUploadDocs.GetBlockBlobReference(oldName)
294     Dim selectedBlobNew As CloudBlockBlob = blobDirectoryUploadDocs.GetBlockBlobReference(newName)
295
296     If (selectedBlobOld.Exists()) Then
297
298         Try
299
300             selectedBlobNew.StartCopyFromBlob(selectedBlobOld)
301             selectedBlobOld.Delete()
302
303             ShowDocumentList()
304
305             Message.Text = ""
306
307         Catch ex As Exception
308
309             Message.Text = "Error writing to file " + newName + "<br>" + err.ToString()
310
311         End Try
312
313     Else
314
315         Message.Text = "File " + oldName + " doesn't exists. Content cannot be written to it."
316
317     End If
318
319 End Sub
```



## Code 10 - Download a Blob

In this example I have shown 3 ways how we can Download a Blob.

- Download to a file – *DownloadFile()*
- Writing to *MemoryStream* and *FileStream*
- Using *Response.Redirect*

<https://github.com/patricksameerajayalath/Azure.FileStorage/blob/master/Default.aspx.vb#L321>

```
321 Private Sub DownloadFile_Click(ByVal sender As Object, ByVal e As System.EventArgs) Handles DownloadFile.Click
322
323     Dim selectedFileName As String = DownloadFileName.Text
324
325     Dim blobContainer As CloudBlobContainer = GetStorageContainerReference()
326
327     '<add key="storage:directoryUploadDocs" value="upload_docs" />
328     Dim directoryUploadDocs As String = ConfigurationManager.AppSettings("storage:directoryUploadDocs")
329     Dim blobDirectoryUploadDocs As CloudBlobDirectory = blobContainer.GetDirectoryReference(directoryUploadDocs)
330     Dim blockBlobUploadDocs As CloudBlockBlob = blobContainer.GetBlockBlobReference(directoryUploadDocs)
331
332     Dim selectedBlob As CloudBlockBlob = blobDirectoryUploadDocs.GetBlockBlobReference(selectedFileName)
333
334     If (selectedBlob.Exists()) Then
335
336         Dim fileName As String = Path.GetFileName(selectedBlob.Name)
337         Dim downloadFilePath As String = "c:\users\psam0403\desktop\" + fileName
338
339         ' method 1 - DownloadToFile
340         'selectedBlob.DownloadToFile(downloadFilePath, FileMode.Create)
341
342         ' method 2 - DownloadToStream
343         'Dim memoryStream As MemoryStream = New MemoryStream()
344         'selectedBlob.DownloadToStream(memoryStream)
345         'Dim byteArray As Byte() = memoryStream.ToArray()
346         'Dim newDownloadFile As New FileStream(downloadFilePath, FileMode.Create, FileAccess.Write)
347         'memoryStream.WriteTo(newDownloadFile)
348         'newDownloadFile.Close()
349         'memoryStream.Close()
350
351         'ShowDocumentList()
352
353         'Message.Text = ""
354
355         ' method 3 - Response.Redirect
356         Dim policy As New SharedAccessBlobPolicy
357         policy.Permissions = SharedAccessBlobPermissions.Read
358         policy.SharedAccessExpiryTime = DateTimeOffset.UtcNow.AddMinutes(20)
359
360         Dim blobUri As String = selectedBlob.Uri.ToString() + selectedBlob.GetSharedAccessSignature(policy)
361         Response.Redirect(blobUri)
362
363     Else
364
365         Message.Text = "File " + selectedFileName + " cannot be downloaded. It doesn't exists."
366
367     End If
368
369 End Sub
```