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Secure Workspace

API Reference Manual

Library Version 1.0.4 *(Beta)*

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⚠	Please note this version of the .NET Core library has been ported from .NET library. It has been tested by the QA team and the development team on Windows environment. Hence this version is still marked as Beta.

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Section 1. Version History

Version Number	Revision Date	Summary of Changes	Changed by
V 1.0	1st September 2020	Initial Draft	OK

Section 2. Copyright

Section 3. About Galaxkey

Galaxkey is a data protection company providing a portfolio of corporate data protection products to secure all data and support multinational data compliance regulations. Galaxkey is a global company with its headquarters in the UK. Our Galaxkey team has vast experience working with large multinational organisations across a variety of sectors and Galaxkey has select partners globally to provide local support and service to our customers across the globe. Our robust and experienced team offers exceptional customer service as well as quick response and turnaround times.

3.1. Disclaimer

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3.2. Galaxkey Secure Workspace API Reference Manual

Galaxkey Secure Workspace allows you to share sensitive and confidential information securely and easily.

By using Galaxkey Secure Workspace, you can team up with colleagues to edit, save and share sensitive information with the assurance that it is secure and encrypted – ensuring that the information that you share within your group remains protected.

The Workspace provides an API which can be easily used and incorporated into Applications to automate workflows. The API is .NET Core API and can be used on all platforms that support .NET Core.

This document provides the details API functions that are available with the .NET Core Library.

Section 4. Technical Specifications

4.1.Support Platform

The API is supported on a **.NET Core 3.1** and above programmers build environment.

4.2.Download the library

The library can be downloaded via private sharing by Galaxkey Product Team. Please contact *support@galaxkey.com* to get the library.

Section 5. API Reference Manual

5.1. How to use the library

5.1.1. Add library to project (for Visual Studio)

1. Copy the provided GXKWorkspaceAPI.x.x.x.nupkg file into a folder.
2. Open Nuget Package Manager
3. In the **Available package sources:** press the add button to add a new package path
4. Then while the package is highlighted, set the name for the package and set the path to the folder where you have copied the GXKWorkspaceAPI.x.x.x.nupkg file.
5. Then using the Nuget manager, add the reference to the library to the project where you are integrating the Galaxkey Workspace API

5.1.2. Usage

Once you have downloaded the library and added to your project as reference, you can use the Class Workspace API to make the calls to the Secure Workspace.

Sample code to use the library is as follows

```
using static GXKWorkspaceAPI.Workspace;

namespace GXKWorkspaceAPISample
{
    class Program
    {
        static void Main(string[] args)
        {
           // Create an object of the class Workspace
           static GXKWorkspaceAPI.Workspace workspace = new GXKWorkspaceAPI.Workspace();

           // Open a connection to the workspace
           string strJson = workspace.ConnectToWorkspace("bob@domain.com", "password");
           // Result of the ConnectToWorkspace call is a JSON string
           Console.WriteLine(strJson);

           // Open an instance of the workspace “Test Workspace”
           strJson = workspace.OpenWorkspace("Test Workspace",true);
           // Result of the OpenWorkspace call is a JSON string
           Console.WriteLine(strJson);
           Console.ReadKey();
        }
    }
}
```

5.2. Return JSON Structure

All the functions of the API return the result of the function call in a JSON structure which is as follows

```
{
  "result": "",
  "message": "",
  "data": ""
}
```

The result key contains either true or false depending on the result of the function call. The message key contains the message returned by the function call when it has failed or even when there is some message that is returned by the function call. The data key contains the response of the call in JSON form. For example, if the call is to get the list of files in a Workspace, the data will contain the list of all the files.

5.3.Files structure in Workspace

All the files in the Workspace are addressed relative to the root of the Workspace. For example, a file sample.txt which is in the root of the workspace is `\\sample.txt`. If the file is inside a folder called folder1 it will be `\\folder1\\sample.txt`. When we obtain the entire file list with the API, the files will be listed with absolute path from the root of the Workspace. Folders are returned with a `\\` at the end of the path. The folder1 will be returned as `\\folder1\\`.

5.4. Workspace API

The following set of functions are operations on a Workspace.

5.4.1. Connect to Workspace

This API is used to connect to a workspace in the Galaxkey Secure Workspaces. This function authenticates user and initialises all necessary data structure in class. Calling this function is mandatory for any action to be taken on workspace.

5.4.1.1. Prototype

```
string ConnectToWorkspace(string userIdentity, string userPassword)
```

5.4.1.2. Parameters

Parameter	Description
userIdentity	This variable contains the user identity of the user which is an email address of the identity used to connect to Galaxkey
userPassword	This variable contains the user's password

5.4.1.3. Return

The function call will return the JSON result of connection to the workspace. Possible return values are as follows

Key	Possible Value
result	true – if the workspace is connected successfully false – if the workspace is not connected
message	Contains the message if the workspace is not connected
data	No value

5.4.2. Create Workspace

This API is used to create a workspace in the Galaxkey Secure Workspaces.

5.4.2.1. Prototype

```
string CreateWorkspace(string workspaceJson);
```

5.4.2.2. Parameters

<table>
<tr><th>Parameter</th><th>Description</th></tr>
<tr><td><b>workspaceJson</b></td><td>

This JSON contains the attributes for the workspace. The JSON contains the following:

```
{
  "name": "",
  "description": "",
  "systemnotifications": {
    "downloaded": true,
    "viewed": true
  },
  "enabledatetimeout": "2020-11-04 08:38:28",
  "yoti_enabled": false,
  "members": [
    {
      "identity": "user2@galaxkey.it",
      "accessrights": {
        "download": true
      }
    },
    {
      "identity": "user3@galaxkey.it",
      "accessrights": {
        "download": true
      }
    }
  ]
}
```

⚠	All the JSON keys are case sensitive.

name — Name of the workspace. This name cannot be more than 100 characters in length

description — Description of the workspace. Not more than 200 characters in length

systemnotifications — These are notifications that are sent to the workspace owner on specific actions. The possible keys for these JSON are as follows:

downloaded, viewed, updated, added and deleted

If the key is specified with true, it will be enabled for the workspace. If the key is not specified, it will be false by default.

enabledatetimeout — This key contains the timeout for the workspace after which it won’t be visible to the members of the workspace. The value of this key has to be specified in the format of yyyy-MM-dd HH:mm:ss

</td></tr>
</table>

		⚠ The value has to be in UTC.
	yoti_enabled	If this key is set to true, the workspace would be enabled to verify members with Yoti before they can access the files in this workspace.
	members	The member key contains an array of member JSONs. Each element of the array contains a JSON with the identity of the member and the access rights given to each member. The keys for the members JSON are as follows identity – Email address of the identity. accessrights – Contains the access rights for the identity. The possible keys for these JSON are as follows: download, add, write, canseeothermembers, delete, managemembers and membernotifications If the key is specified with true, it will be enabled for the member. If the key is not specified, it will be false by default.

5.4.2.3. Return

The function call will return the JSON result of creation of the workspace. Possible return values are as follows

Key	Possible Value
result	true – if the workspace is created successfully false – if the workspace is not created
message	Contains the message if the workspace is not created
data	No value

5.4.3. Open Workspace

This API is used to open an existing workspace in the Galaxkey Secure Workspaces.

5.4.3.1. Prototype

```
string OpenWorkspace(string workspaceName, bool getFileList)
```

5.4.3.2. Parameters

Parameter	Description
workspaceName	Name of the workspace. This can be maximum 100 characters in length.
getFileList	If the value of this parameter is true, the function call will also return the list of all the files and folders in the workspace.

5.4.3.3. Return

The function call will return the JSON result of creation of the workspace. Possible return values are as follows

<table>
<tr><th>Key</th><th>Possible Value</th></tr>
<tr><td><b>result</b></td><td>true – if the workspace is opened successfully
false – if the workspace is opened</td></tr>
<tr><td><b>message</b></td><td>Contains the message if the workspace is not opened</td></tr>
<tr><td><b>data</b></td><td>If the value for the variable <code>getFileList</code> is set to true. The function will return the list of all the files and folders in the workspace in a JSON array. Sample return JSON is as follows:
<pre>
{
  "result": "true",
  "message": "",
  "data": [
    {
      "path": "\\sample file.xlsx",
      "modified_date_in_utc": "2020-10-04 08:47:31",
      "size": 11618,
      "currentversion": "1",
      "type": "file"
    },
    {
      "path": "\\setup.msi",
      "modified_date_in_utc": "2020-10-04 11:22:17",
      "size": 25666253,
      "currentversion": "1",
      "type": "file"
    },
</pre></td></tr>
</table>

```
    {
      "path": "\\Temp\\",
      "modified_date_in_utc": "2020-10-04 11:38:54",
      "size": 0,
      "currentversion": "1",
      "type": "folder"
    },
    {
      "path": "\\Temp\\InnerTemp\\",
      "modified_date_in_utc": "2020-10-05 13:04:44",
      "size": 0,
      "currentversion": "1",
      "type": "folder"
    },
    {
      "path": "\\Temp\\InnerTemp\\SecondLevel\\",
      "modified_date_in_utc": "2020-10-05 13:04:51",
      "size": 0,
      "currentversion": "1",
      "type": "folder"
    }
  ]
}
```

Each file element contains the following keys in the JSON array.

path	Absolute path of the file or folder in the workspace. If the value ends with \\ it’s a folder.
modified_date_in_utc	This field contains the modified date of the file in UTC.
Size	File size. If the file is folder then this value is 0
currentversion	This is the version of the file in Workspace
type	folder or file depending on the file type.

5.4.4. Delete Workspace

This API is used to delete an existing workspace in the Galaxkey Secure Workspaces.

5.4.4.1. Prototype

```
string DeleteWorkspace(string workspaceName)
```

5.4.4.2. Parameters

Parameter	Description
workspaceName	Name of the workspace. This can be maximum 100 characters in length.

5.4.4.3. Return

The function call will return the JSON result of deletion of the workspace. Possible return values are as follows

Key	Possible Value
result	true – if the workspace is deleted successfully false – if the workspace is not deleted
message	Contains the message if the workspace is not deleted
data	Not applicable

5.5.File API

The following set of functions are operations on files and folders in a Workspace.

5.5.1. List Files

This API is used to list all the files and folders in a workspace in the Galaxkey Secure Workspaces.

5.5.1.1. Prototype

```
string ListFilesAndFolders();
```

5.5.1.2. Parameters

None

5.5.1.3. Return

The function call will return the JSON result of list of the files in the workspace. Possible return values are as follows

<table>
<tr><th>Key</th><th>Possible Value</th></tr>
<tr><td><b>result</b></td><td>true – if the file and folder list if obtained
false – if there is an error getting the file and folder list</td></tr>
<tr><td><b>message</b></td><td>Contains the message if the files and folder list is not obtained</td></tr>
<tr><td><b>data</b></td><td>The function will return the list of all the files and folders in the workspace in a JSON array. Sample return JSON is as follows:

```
{
  "result": "true",
  "message": "",
  "data": [
    {
      "path": "\\sample file.xlsx",
      "modified_date_in_utc": "2020-10-04 08:47:31",
      "size": 11618,
      "currentversion": "1",
      "type": "file"
    },
    {
      "path": "\\setup.msi",
      "modified_date_in_utc": "2020-10-04 11:22:17",
      "size": 25666253,
      "currentversion": "1",
      "type": "file"
    },
    {
      "path": "\\Temp\\",
      "modified_date_in_utc": "2020-10-04 11:38:54",
      "size": 0,
      "currentversion": "1",
      "type": "folder"
```

</td></tr>
</table>

```
    },
    {
      "path": "\\Temp\\InnerTemp\\",
      "modified_date_in_utc": "2020-10-05 13:04:44",
      "size": 0,
      "currentversion": "1",
      "type": "folder"
    },
    {
      "path": "\\Temp\\InnerTemp\\SecondLevel\\",
      "modified_date_in_utc": "2020-10-05 13:04:51",
      "size": 0,
      "currentversion": "1",
      "type": "folder"
    }
  ]
}
```

Each file element contains the following keys in the JSON array.

path	Absolute path of the file or folder in the workspace. If the value ends with \\ it’s a folder.
modified_date_in_utc	This field contains the modified date of the file in UTC.
Size	File size. If the file is folder then this value is 0
currentversion	This is the version of the file in Workspace
type	folder or file depending on the file type.

5.5.2. Upload File

This API is used to upload in a workspace in the Galaxkey Secure Workspaces.

⚠	This function is an Asynchronous function. When the function is called it returns immediately.

5.5.2.1. Prototype

```
string UploadFile(string localSourceFile, string workspacePathToUpload);
```

5.5.2.2. Parameters

Parameter	Description
localSourceFile	Full path of the file on the local machine that needs to be uploaded. Since this function is asynchronous, we need to ensure the local file remains while it is being uploaded.
workspacePathToUpload	This variable contains the path of the folder where the file needs to be uploaded. The path of the file is absolute to the root of the workspace where the file is being uploaded. If the path is not present it will be automatically created.

5.5.2.3. Return

The function call will return the JSON result. Possible return values are as follows

Key	Possible Value
result	true – if the file is uploaded false – if there is an error to start uploading the file ⚠ Since this function is asynchronous, once the file is accepted for upload, the function will always return true. The error of upload should be tracked using the upload events.
message	Contains the message if the file is not readied for upload
data	Not applicable

5.5.2.4. Events

There are three events which are triggered when the file is being uploaded. The user can setup handlers for these events and display progress in their applications.

<table>
<tr><th>Event</th><th>Details</th></tr>
<tr><td><b>Progress</b></td><td>This event is triggered when the file is being uploaded. The event handler prototype is:
<code>void Workspace_eventUploadProgress(long nBytesUploaded, long nTotalBytes, string strFileName, long nApproximateTimeRequiredToCompleteInSeconds)</code>
<table>
<tr><td>nBytesUploaded</td><td>Contains the bytes uploaded</td></tr>
<tr><td>nTotalBytes</td><td>Contain the total bytes that are given for upload</td></tr>
<tr><td>strFileName</td><td>Contains the name of the file</td></tr>
<tr><td>nApproximateTimeRequiredToCompleteInSeconds</td><td>Contains the approximate time required to upload the remaining bytes</td></tr>
</table></td></tr>
<tr><td><b>Complete</b></td><td>This event is triggered when the file is being uploaded. The event handler prototype is:
<code>void Workspace_eventUploadCompleted(long nTotalBytesUploaded, bool bSuccess, string strFileName)</code>
<table>
<tr><td>nTotalBytesUploaded</td><td>Contain the total bytes that are given for upload</td></tr>
<tr><td>bSuccess</td><td>Status of upload, either success or failure indicated by true or false</td></tr>
<tr><td>strFileName</td><td>Contains the name of the file</td></tr>
</table></td></tr>
<tr><td><b>Error</b></td><td>This event is triggered when the file uploading has encountered an error. The event handler prototype is:
<code>void Workspace_eventUploadError(string strError, string strFileName)</code>
<table>
<tr><td>strError</td><td>Error with the details of the failure of upload</td></tr>
<tr><td>strFileName</td><td>Contains the name of the file</td></tr>
</table></td></tr>
</table>

5.5.2.5. Sample code to upload file

```
// Initialise and start the file upload

Workspace workspace = new Workspace();
string strResult = workspace.ConnectToWorkspace("bob@domain.com", "password");
workspace.eventUploadProgress += Workspace_eventUploadProgress;
workspace.eventUploadError += Workspace_eventUploadError;
workspace.eventUploadCompleted += Workspace_eventUploadCompleted;
string strResult = workspace.UploadFile("c:\\SampleFile.txt", "\\");
Console.WriteLine(strResult);



// Event handlers
void Workspace_eventUploadCompleted(long nTotalBytesUploaded, bool bSuccess, string
strFileName)
{
       // Upload complete event hander
}

void Workspace_eventUploadError(string strError, string strFileName)
{
       // Upload Error event hander
}

void Workspace_eventUploadProgress(long nBytesUploaded, long nTotalBytes, string
strFileName, long nApproximateTimeRequiredToCompleteInSeconds)
{
       // Upload Progress event hander
}
```

5.5.3. Download File

This API is used to download file from a workspace in the Galaxkey Secure Workspaces.

⚠	This function is an Asynchronous function. When the function is called it returns immediately.

5.5.3.1. Prototype

```
string DownloadFile(string remoteFilePath, string destinationFilePath);
```

5.5.3.2. Parameters

Parameter	Description
remoteFilePath	Full path of the file on the local machine that needs to be uploaded.
destinationFilePath	This variable contains the path of the destination file where the downloaded file is copied into. The full path also contains the filename.

5.5.3.3. Return

The function call will return the JSON result. Possible return values are as follows

Key	Possible Value
result	true – if the file is downloaded false – if there is an error to start download the file ⚠ Since this function is asynchronous, once the file is accepted for download, the function will always return true. The error of download should be tracked using the download events.
message	Contains the message if the file is not readied for download
data	Not applicable

5.5.3.4. Events

There are three events which are triggered when the file is being downloaded. The user can setup handlers for these events and display progress in their applications.

Event	Details

<table>
<tr>
<td><b>Progress</b></td>
<td>This event is triggered when the file is being downloaded. The event handler prototype is:

<code>void Workspace_eventDownloadProgress(long nBytesDownloaded, long nTotalBytes, string strFileName, long nApproximateTimeRequiredToCompleteInSeconds</code>
<table>
<tr><td>nBytesUploaded</td><td>Contains the bytes downloaded</td></tr>
<tr><td>nTotalBytes</td><td>Contain the total bytes that are being downloaded</td></tr>
<tr><td>strFileName</td><td>Contains the name of the file</td></tr>
<tr><td>nApproximateTimeRequiredToCompleteInSeconds</td><td>Contains the approximate time required to download the remaining bytes</td></tr>
</table>
</td>
</tr>
<tr>
<td><b>Complete</b></td>
<td>This event is triggered when the file is being uploaded. The event handler prototype is:

<code>void Workspace_eventDownloadCompleted(nTotalBytesDownloaded, bool bSuccess, string strFileName</code>
<table>
<tr><td>nTotalBytesDownloaded</td><td>Contain the total bytes that are downloaded</td></tr>
<tr><td>bSuccess</td><td>Status of download, either success or failure indicated by true or false</td></tr>
<tr><td>strFileName</td><td>Contains the name of the file</td></tr>
</table>
</td>
</tr>
<tr>
<td><b>Error</b></td>
<td>This event is triggered when the file uploading has encountered an error. The event handler prototype is:

<code>void Workspace_eventDownloadError(string strError, string strFileName)</code>
<table>
<tr><td>strError</td><td>Error with the details of the failure of download</td></tr>
<tr><td>strFileName</td><td>Contains the name of the file</td></tr>
</table>
</td>
</tr>
</table>

5.5.3.5. Sample code to download file

```
// Initialise and start the file download
Workspace workspace = new Workspace();
string strResult = workspace.ConnectToWorkspace("bob@domain.com", "password");
workspace.eventDownloadProgress += Workspace_eventDownloadProgress;
workspace.eventDownloadError += Workspace_eventDownloadError;
workspace.eventDownloadCompleted += Workspace_eventDownloadCompleted;
string strResult = workspace.DownloadFile("\\Folder1\\SampleFile.txt",
"c:\\SampleFile.txt");
Console.WriteLine(strResult);



// Event handlers
void Workspace_eventDownloadCompleted(long nTotalBytesUploaded, bool bSuccess, string
strFileName)
{
       // Download complete event
}

void Workspace_eventDownloadError(string strError, string strFileName)
{
       // Download Error event
}

void Workspace_eventDownloadProgress(long nBytesDownloaded, long nTotalBytes, string
strFileName, long nApproximateTimeRequiredToCompleteInSeconds)
{
       // Download Progress event
}
```

5.5.4. Create Folder

This API is used to create a folder in a workspace in the Galaxkey Secure Workspaces.

5.5.4.1. Prototype

```
string CreateFolder(string pathToFolder)
```

5.5.4.2. Parameters

Parameter	Description

pathToFolder	Path to the folder to be created. The folder path is absolute from the root of the Workspace. For example
	`\\Folder1`
	Or
	`\\Folder1\\Folder2`

5.5.4.3. Return

The function call will return the JSON result. Possible return values are as follows

Key	Possible Value
result	true – if the folder is created false – if there is an error to create the folder
message	Contains the message if the folder is not created
data	Not applicable

5.5.5. Delete File

This API is used to delete a file in a workspace in the Galaxkey Secure Workspaces.

5.5.5.1. Prototype

```
string DeleteFile(string pathToFile)
```

5.5.5.2. Parameters

Parameter	Description

pathToFile	Path to the file to be deleted. The file path is absolute from the root of the Workspace. For example
	`\\Folder1\\SampleFile.txt`
	Or
	`\\Folder1\\Folder2\\SampleFile.txt`

5.5.5.3. Return

The function call will return the JSON result. Possible return values are as follows

Key	Possible Value
result	true – if the file is deleted false – if there is an error to delete the file
message	Contains the message if the file is not deleted
data	Not applicable