SharePoint Tech Bytes

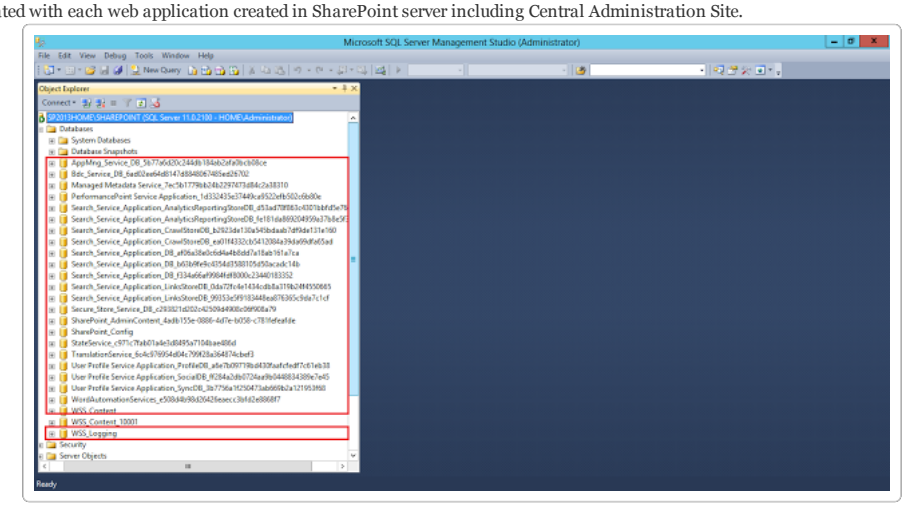
Monday, July 15, 2013

SharePoint 2013 - The content databases, tables and SQL queries

Today we will take a closer look at the content database associated with a SharePoint 2013 Web application and also discuss about some of the important tables, their relationships and some important SQL queries relating them.

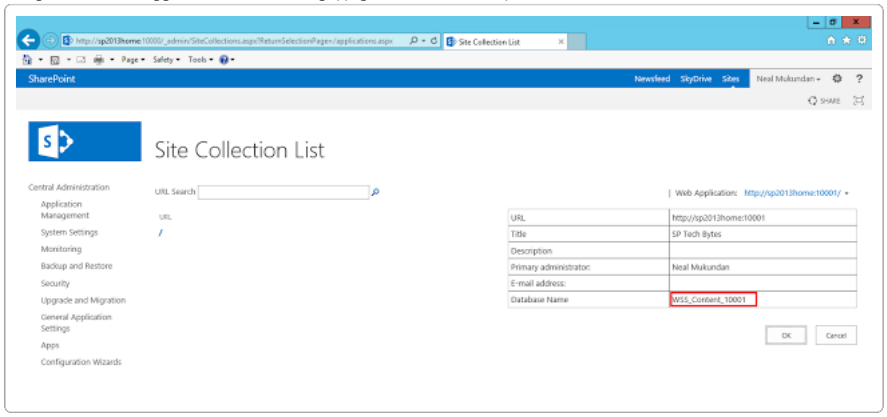
The Content Database - Server

Open SQL Server Management Studio and connect to the DB Server configured for SharePoint 2013. You will see a number of databases as shown in the following figure. The databases for SharePoint internal configurations are highlight in red. While other databases are associated with each web application created in SharePoint server including Central Administration Site.

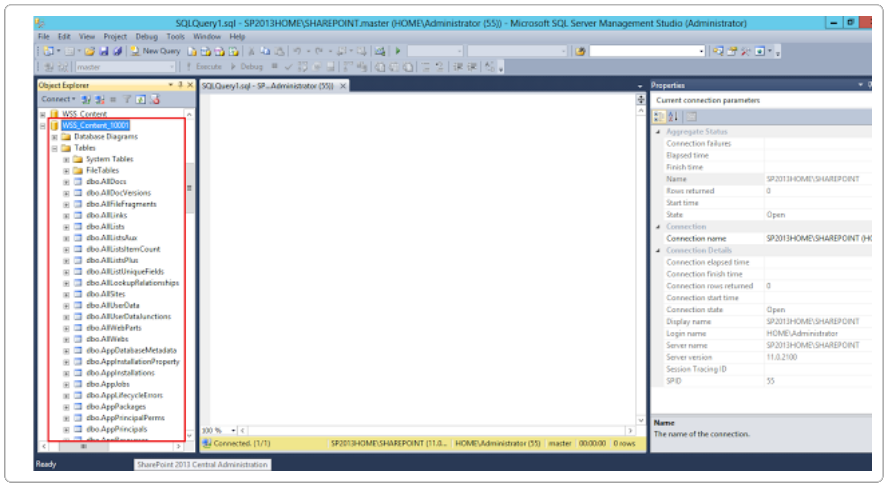


The Content Database - Associated Web application

Lets take an example of the web application named "*http://sp2013home:10001/*" to understand the content DB structure associated with it.



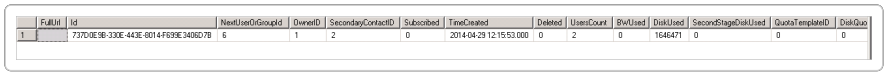
The Content DB associated with our web application is "*WSS_Content_10001*". As shown in the following figure a content db consist of numerous tables that are internal managed by SharePoint.



The Content Database - Tables

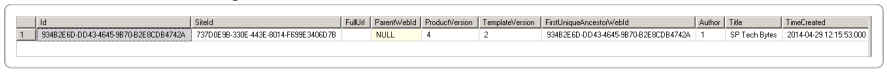
We will discuss a few important tables that exist in every content database.

1) **Sites:** Holds information about all the site collections for this content database.



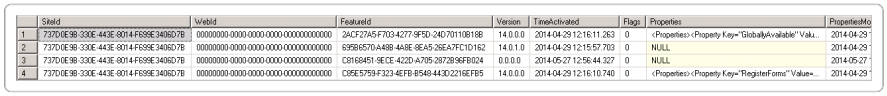
	FullUrl	Id	NextUserOrGroupId	OwnerID	SecondaryContactID	Subscribed	TimeCreated	Deleted	UsersCount	BlvUsed	DiskUsed	SecondStageDiskUsed	QuotaTemplateID	DiskQuo
1		737D0E9B-330E-443E-8014-F699E3406D7B	6	1	2	0	2014-04-29 12:15:53.000	0	2	0	1646471	0	0	0

2) **Webs:** Holds information about all the specific sites (webs) in each site collection.



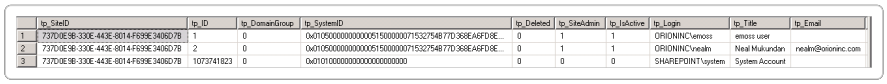
	Id	SiteId	FullUrl	ParentWebId	ProductVersion	TemplateVersion	FirstUniqueAncestorWebId	Author	Title	TimeCreated
1	934B2E6D-DD43-4645-9B70-B2E8CDB4742A	737D0E9B-330E-443E-8014-F699E3406D7B		NULL	4	2	934B2E6D-DD43-4645-9B70-B2E8CDB4742A	1	SP Tech Bytes	2014-04-29 12:15:53.000

3) **Features:** Holds information about all the activated features for each site collection or site.



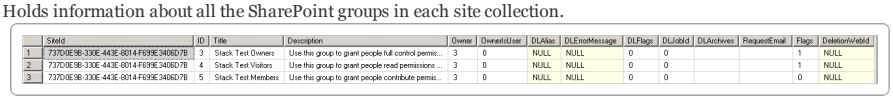
	SiteId	WebId	FeatureId	Version	TimeActivated	Flags	Properties	PropertiesMo
1	737D0E9B-330E-443E-8014-F699E3406D7B	00000000-0000-0000-0000-000000000000	2ACF27A5-F703-4277-9F5D-24D7011DB18B	14.0.0.0	2014-04-29 12:16:11.263	0	<Properties><Property Key="GlobalyAvailable" Valu...	2014-04-29
2	737D0E9B-330E-443E-8014-F699E3406D7B	00000000-0000-0000-0000-000000000000	695B6570-A488-4A8E-8EA5-26EA7FC1D162	14.0.1.0	2014-04-29 12:15:57.703	0	NULL	2014-04-29
3	737D0E9B-330E-443E-8014-F699E3406D7B	00000000-0000-0000-0000-000000000000	C8168451-9ECE-422D-A705-2872B96FB024	0.0.0.0	2014-05-27 12:56:44.327	0	NULL	2014-05-27
4	737D0E9B-330E-443E-8014-F699E3406D7B	00000000-0000-0000-0000-000000000000	C85E5759-F323-4EFB-B549-443D2216EFB5	14.0.0.0	2014-04-29 12:16:10.740	0	<Properties><Property Key="RegisterForms" Value=...	2014-04-29

4) **UserInfo:** Holds information about all the users for each site collection.



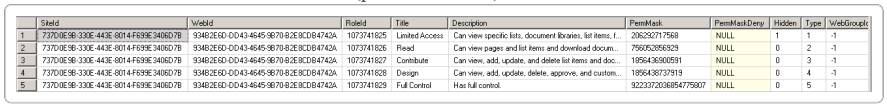
	tp_SiteID	tp_ID	tp_DomainGroup	tp_SystemID	tp_Deleted	tp_SiteAdmin	tp_IsActive	tp_Login	tp_Title	tp_Email
1	737D0E9B-330E-443E-8014-F699E3406D7B	1	0	0x01050000000000051500000071532754877D368EA6FD8E...	0	1	1	ORIONINC\emoss	emoss user	
2	737D0E9B-330E-443E-8014-F699E3406D7B	2	0	0x01050000000000051500000071532754877D368EA6FD8E...	0	1	1	ORIONINC\nealm	Neal Mukundan	nealm@orioninc.com
3	737D0E9B-330E-443E-8014-F699E3406D7B	1073741823	0	0x010100000000000000000000	0	0	0	SHAREPOINT\system	System Account	

5) **Groups:** Holds information about all the SharePoint groups in each site collection.



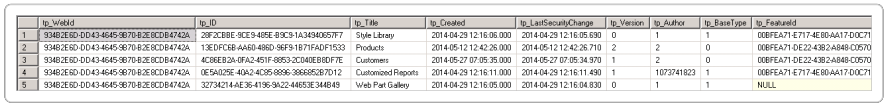
	SiteId	ID	Title	Description	Owner	OwnerIsUser	DLAlias	DLErrorMessage	DLFlags	DLLobId	DLArchives	RequestEmail	Flags	DeletionWebId
1	737D0E9B-330E-443E-8014-F699E3406D7B	3	Stack Test Owners	Use this group to grant people full control permis...	3	0	NULL	NULL	0	0			1	NULL
2	737D0E9B-330E-443E-8014-F699E3406D7B	4	Stack Test Visitors	Use this group to grant people read permissions ...	3	0	NULL	NULL	0	0			1	NULL
3	737D0E9B-330E-443E-8014-F699E3406D7B	5	Stack Test Members	Use this group to grant people contribute permis...	3	0	NULL	NULL	0	0			0	NULL

6) **Roles:** Holds information about all the SharePoint roles (permission levels) for each site.



	SiteId	WebId	RoleId	Title	Description	PermMask	PermMaskDeny	Hidden	Type	WebGroupI
1	737D0E9B-330E-443E-8014-F699E3406D7B	934B2E6D-DD43-4645-9B70-B2E8CDB4742A	1073741825	Limited Access	Can view specific lists, document libraries, list items, f...	206232717568	NULL	1	1	-1
2	737D0E9B-330E-443E-8014-F699E3406D7B	934B2E6D-DD43-4645-9B70-B2E8CDB4742A	1073741826	Read	Can view pages and list items and download docum...	756052856329	NULL	0	2	-1
3	737D0E9B-330E-443E-8014-F699E3406D7B	934B2E6D-DD43-4645-9B70-B2E8CDB4742A	1073741827	Contribute	Can view, add, update, and delete list items and doc...	195643900591	NULL	0	3	-1
4	737D0E9B-330E-443E-8014-F699E3406D7B	934B2E6D-DD43-4645-9B70-B2E8CDB4742A	1073741828	Design	Can view, add, update, delete, approve, and custom...	195643873919	NULL	0	4	-1
5	737D0E9B-330E-443E-8014-F699E3406D7B	934B2E6D-DD43-4645-9B70-B2E8CDB4742A	1073741829	Full Control	Has full control.	9223372036854775807	NULL	0	5	-1

7) **AllLists:** Holds information about lists for each site.

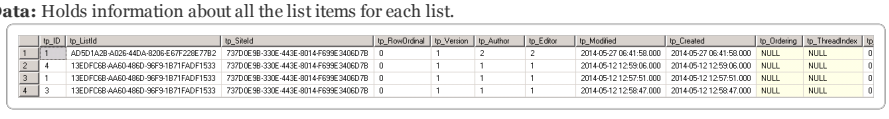


	tp_WebId	tp_ID	tp_Title	tp_Created	tp_LastSecurityChange	tp_Version	tp_Author	tp_BaseType	tp_FeatureId
1	934B2E6D-DD43-4645-9B70-B2E8CDB4742A	28F2CBBE-9CE9-485E-B9C9-1A3494065FF7	Style Library	2014-04-29 12:16:06.000	2014-04-29 12:16:05.690	0	1	1	00BFEA71-E717-4E80-AA17-D0C71
2	934B2E6D-DD43-4645-9B70-B2E8CDB4742A	13EDFCBB-AA60-486D-96F9-1B71FADF1533	Products	2014-05-12 12:42:26.000	2014-05-12 12:42:26.710	2	2	0	00BFEA71-DE22-43B2-A848-C0570
3	934B2E6D-DD43-4645-9B70-B2E8CDB4742A	4C86EB2A-0FA2-451F-8853-2C040E86DF7E	Customers	2014-05-27 07:05:35.000	2014-05-27 07:05:34.970	1	2	0	00BFEA71-DE22-43B2-A848-C0570
4	934B2E6D-DD43-4645-9B70-B2E8CDB4742A	0E5A025E-40A2-4C85-8B9B-3B6B5B7D12	Customized Reports	2014-04-29 12:16:11.000	2014-04-29 12:16:11.490	1	1073741823	1	00BFEA71-E717-4E80-AA17-D0C71
5	934B2E6D-DD43-4645-9B70-B2E8CDB4742A	32734214-AE36-4196-9A22-44653E344B49	Web Part Gallery	2014-04-29 12:16:05.000	2014-04-29 12:16:04.830	0	1	1	NULL

8) **GroupMembership:** Holds information about all the SharePoint group members.

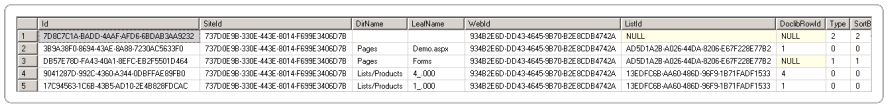
	SiteId	GroupId	MemberId
1	737D0E9B-330E-443E-8014-F699E3406D7B	3	1
2	737D0E9B-330E-443E-8014-F699E3406D7B	3	2

9) **AllUserData:** Holds information about all the list items for each list.



	tp_ID	tp_ListId	tp_SiteId	tp_RowOrdinal	tp_Version	tp_Author	tp_Editor	tp_Modified	tp_Created	tp_Ordering	tp_ThreadIndex	tp
1	1	AD5D1A2B-A026-44DA-8206-E67F228E77B2	737D0E9B-330E-443E-8014-F699E3406D7B	0	1	2	2	2014-05-27 06:41:58.000	2014-05-27 06:41:58.000	NULL	NULL	0
2	4	13EDFCBB-AA60-486D-96F9-1B71FADF1533	737D0E9B-330E-443E-8014-F699E3406D7B	0	1	1	1	2014-05-12 12:59:06.000	2014-05-12 12:59:06.000	NULL	NULL	0
3	1	13EDFCBB-AA60-486D-96F9-1B71FADF1533	737D0E9B-330E-443E-8014-F699E3406D7B	0	1	1	1	2014-05-12 12:57:51.000	2014-05-12 12:57:51.000	NULL	NULL	0
4	3	13EDFCBB-AA60-486D-96F9-1B71FADF1533	737D0E9B-330E-443E-8014-F699E3406D7B	0	1	1	1	2014-05-12 12:58:47.000	2014-05-12 12:58:47.000	NULL	NULL	0

10) **AllDocs:** Holds information about all the documents (and all list items) for each document library and list.



	Id	SiteId	DirName	LeafName	WebId	ListId	DocIdRowId	Type	SortB
1	7D8C7C1A-BADD-4AAF-AFD6-68DAB3AA9232	737D0E9B-330E-443E-8014-F699E3406D7B			934B2E6D-DD43-4645-9B70-B2E8CDB4742A	NULL	NULL	2	2
2	3B9A38F0-8694-43AE-9A89-7230AC5633F0	737D0E9B-330E-443E-8014-F699E3406D7B	Pages	Demo.aspx	934B2E6D-DD43-4645-9B70-B2E8CDB4742A	AD5D1A2B-A026-44DA-8206-E67F228E77B2	1	0	0
3	DB57E78D-FA43-40A1-8EFC-EB2F5501D464	737D0E9B-330E-443E-8014-F699E3406D7B	Pages	Forms	934B2E6D-DD43-4645-9B70-B2E8CDB4742A	AD5D1A2B-A026-44DA-8206-E67F228E77B2	NULL	1	1
4	9041287D-992C-436D-A344-0DBFFAE85FB0	737D0E9B-330E-443E-8014-F699E3406D7B	Lists/Products	4_.000	934B2E6D-DD43-4645-9B70-B2E8CDB4742A	13EDFC6B-AA60-486D-96F9-1B71FADF1533	4	0	0
5	17C34563-1C6B-43B5-AD10-2E4B828FDCAC	737D0E9B-330E-443E-8014-F699E3406D7B	Lists/Products	1_.000	934B2E6D-DD43-4645-9B70-B2E8CDB4742A	13EDFC6B-AA60-486D-96F9-1B71FADF1533	1	0	0

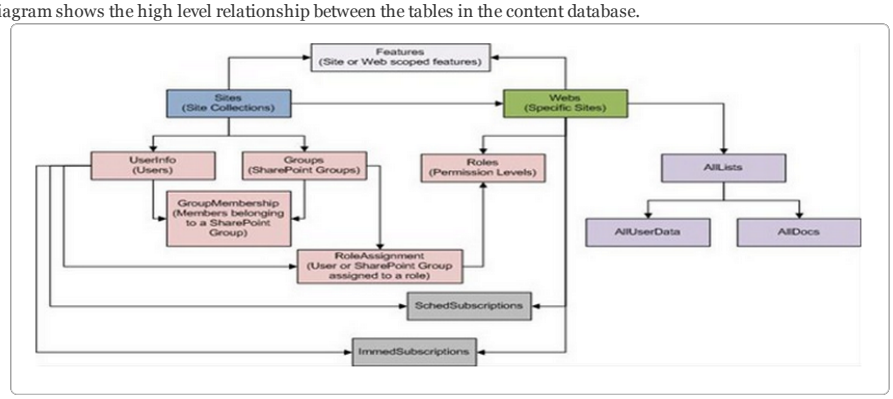
11) **RoleAssignment:** Holds information about all the users or SharePoint groups that are assigned to roles.

	SiteId	ScopeId	RoleId	PrincipalId
1	737D0E9B-330E-443E-8014-F699E3406D7B	D5C342D9-6DA6-4073-81AC-E52EE46BBD50	1073741829	2
2	737D0E9B-330E-443E-8014-F699E3406D7B	D5C342D9-6DA6-4073-81AC-E52EE46BBD50	1073741829	3
3	737D0E9B-330E-443E-8014-F699E3406D7B	D5C342D9-6DA6-4073-81AC-E52EE46BBD50	1073741826	4
4	737D0E9B-330E-443E-8014-F699E3406D7B	D5C342D9-6DA6-4073-81AC-E52EE46BBD50	1073741827	5

12) **SchedSubscriptions:** Holds information about all the scheduled subscriptions (alerts) for each user.
13) **ImmedSubscriptions:** Holds information about all the immediate subscriptions (alerts) for each user.

The Content Database - Relationships

Following diagram shows the high level relationship between the tables in the content database.



The Content Database - Important SQL Queries

Following are some of the important sql queries that can be used to view the data in Content DB.

1) Query to get all the top level site collections

```
SELECT SiteId AS SiteGuid, Id AS WebGuid, FullUrl AS Url, Title, Author, TimeCreated
FROM dbo.Webs
WHERE (ParentWebId IS NULL)
```

2) Query to get all the child sites in a site collection

```
SELECT SiteId AS SiteGuid, Id AS WebGuid, FullUrl AS Url, Title, Author, TimeCreated
FROM dbo.Webs
WHERE (NOT (ParentWebId IS NULL))
```

3) Query to get all the SharePoint groups in a site collection

```
SELECT dbo.Webs.SiteId, dbo.Webs.Id, dbo.Webs.FullUrl, dbo.Webs.Title, dbo.Groups.ID AS Expr1,
dbo.Groups.Title AS Expr2, dbo.Groups.Description
FROM dbo.Groups INNER JOIN
dbo.Webs ON dbo.Groups.SiteId = dbo.Webs.SiteId
```

4) Query to get all the users in a site collection

```
SELECT dbo.Webs.SiteId, dbo.Webs.Id, dbo.Webs.FullUrl, dbo.Webs.Title, dbo.UserInfo.tp_ID,
dbo.UserInfo.tp_DomainGroup, dbo.UserInfo.tp_SiteAdmin, dbo.UserInfo.tp_Title, dbo.UserInfo.tp_Email
FROM dbo.UserInfo INNER JOIN
dbo.Webs ON dbo.UserInfo.tp_SiteID = dbo.Webs.SiteId
```

5) Query to get all the members of the SharePoint Groups

(i) All the members in all the SharePoint Groups in a web application.

```
SELECT dbo.Groups.ID, dbo.Groups.Title, dbo.UserInfo.tp_Title, dbo.UserInfo.tp_Login
FROM dbo.GroupMembership INNER JOIN
dbo.Groups ON dbo.GroupMembership.SiteId = dbo.Groups.SiteId INNER JOIN
dbo.UserInfo ON dbo.GroupMembership.MemberId = dbo.UserInfo.tp_ID
```

(ii)All the members in each SharePoint Group in a web application.

```
SELECT dbo.Groups.ID, dbo.Groups.Title, dbo.UserInfo.tp_Title, dbo.UserInfo.tp_Login
FROM dbo.GroupMembership with (nolock)
INNER JOIN dbo.Groups with (nolock)
ON dbo.GroupMembership.GroupId = Groups.ID
INNER JOIN dbo.UserInfo
ON dbo.GroupMembership.MemberId = dbo.UserInfo.tp_ID
```

6) Query to get all the sites where a specific feature is activated

```
SELECT dbo.Webs.Id AS WebGuid, dbo.Webs.Title AS WebTitle, dbo.Webs.FullUrl AS WebUrl,
dbo.Features.FeatureId,
dbo.Features.TimeActivated
```

```
FROM dbo.Features INNER JOIN
dbo.Webs ON dbo.Features.SiteId = dbo.Webs.SiteId AND dbo.Features.WebId = dbo.Webs.Id
WHERE (dbo.Features.FeatureId = '00DGEA71-E2FE-42de-9DF3-A44065BE0104')
```

7) Query to get all the users assigned to roles

```
SELECT dbo.Webs.Id, dbo.Webs.Title, dbo.Webs.FullUrl, dbo.Roles.RoleId, dbo.Roles.Title AS RoleTitle,
dbo.UserInfo.tp_Title, dbo.UserInfo.tp_Login
FROM dbo.RoleAssignment INNER JOIN
dbo.Roles ON dbo.RoleAssignment.SiteId = dbo.Roles.SiteId AND
dbo.RoleAssignment.RoleId = dbo.Roles.RoleId INNER JOIN
dbo.Webs ON dbo.Roles.SiteId = dbo.Webs.SiteId AND dbo.Roles.WebId = dbo.Webs.Id INNER JOIN
dbo.UserInfo ON dbo.RoleAssignment.PrincipalId = dbo.UserInfo.tp_ID
```

8) Query to get all the SharePoint groups assigned to roles

```
SELECT dbo.Webs.Id, dbo.Webs.Title, dbo.Webs.FullUrl, dbo.Roles.RoleId, dbo.Roles.Title AS RoleTitle,
dbo.Groups.Title AS GroupName
FROM dbo.RoleAssignment INNER JOIN
dbo.Roles ON dbo.RoleAssignment.SiteId = dbo.Roles.SiteId AND
dbo.RoleAssignment.RoleId = dbo.Roles.RoleId INNER JOIN
dbo.Webs ON dbo.Roles.SiteId = dbo.Webs.SiteId AND dbo.Roles.WebId = dbo.Webs.Id INNER JOIN
dbo.Groups ON dbo.RoleAssignment.SiteId = dbo.Groups.SiteId AND
dbo.RoleAssignment.PrincipalId = dbo.Groups.ID
```

Note:- It is highly recommended that you **NEVER** make any changes through SQL interface because improper use might crash SharePoint Site.

Posted by Neal Mukundan at 9:50 PM

Labels: SharePoint 2013
Location: Ernakulam, Kerala, India

2 comments:

Hamid Mahmood February 3, 2014 at 4:09 PM

Nice. How can I access the sharepoint 2013 database on cloud hosting?

Reply

Excelanto Global Services March 21, 2015 at 12:37 PM

Thanks For Your valuable posting, it was very informative. Am working in Erp Software Company In India

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