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How to transfer logins and passwords between instances of SQL Server

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**http://support.microsoft.com/library/images/support/en-us/20x20_grey_minus.png**[INTRODUCTION](javascript:void(0);)

This article describes how to transfer the logins and the passwords between instances of Microsoft SQL Server 2005, of Microsoft SQL Server 2008, and of Microsoft SQL Server 2012 on different servers.  
  
For more information about how to transfer the logins and the passwords between instances of other versions of SQL Server, click the following article number to view the article in the Microsoft Knowledge Base:

[246133](http://support.microsoft.com/kb/246133)

(http://support.microsoft.com/kb/246133/ )

How to transfer logins and passwords between instances of SQL Server

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In this article, server A and server B are different servers. Additionally, both server A and server B are running SQL Server 2005.   
  
**Note** This information also applies to SQL Server 2008 and to SQL Server 2012.  
  
After you move a database from the instance of SQL Server on server A to the instance of SQL Server on server B, users may be unable to log in to the database on server B. Additionally, users may receive the following error message:

Login failed for user '*MyUser*'. (Microsoft SQL Server, Error: 18456)

This problem occurs because you did not transfer the logins and the passwords from the instance of SQL Server on server A to the instance of SQL Server on server B.  
  
To transfer the logins, use one of the following methods, as appropriate for your situation.  
  
**Method 1: Log in by using the pre-SQL Server 2000 password**  
  
To resolve this issue, ask the user to log in to the server that is running SQL Server by using the pre-SQL Server 2000 login.  
  
**Note** The password hashing is updated automatically when the user logs in by using the pre-SQL Server 2000 password.  
  
**Method 2: Reset the password in SQL Server**  
  
To resolve this issue, reset the password in SQL Server, and then script out the login.  
  
**Note** The password hashing algorithm is used when you reset the password.  
  
**Method 3: Create a log in script that has a blank password**  
  
To create a log in script that has a blank password, follow these steps:

1. On server A, start SQL Server Management Studio, and then connect to the instance of SQL Server from which you moved the database.
2. Open a new Query Editor window, and then run the following script.
3. USE master
4. GO
5. IF OBJECT\_ID ('sp\_hexadecimal') IS NOT NULL
6. DROP PROCEDURE sp\_hexadecimal
7. GO
8. CREATE PROCEDURE sp\_hexadecimal
9. @binvalue varbinary(256),
10. @hexvalue varchar (514) OUTPUT
11. AS
12. DECLARE @charvalue varchar (514)
13. DECLARE @i int
14. DECLARE @length int
15. DECLARE @hexstring char(16)
16. SELECT @charvalue = '0x'
17. SELECT @i = 1
18. SELECT @length = DATALENGTH (@binvalue)
19. SELECT @hexstring = '0123456789ABCDEF'
20. WHILE (@i <= @length)
21. BEGIN
22. DECLARE @tempint int
23. DECLARE @firstint int
24. DECLARE @secondint int
25. SELECT @tempint = CONVERT(int, SUBSTRING(@binvalue,@i,1))
26. SELECT @firstint = FLOOR(@tempint/16)
27. SELECT @secondint = @tempint - (@firstint\*16)
28. SELECT @charvalue = @charvalue +
29. SUBSTRING(@hexstring, @firstint+1, 1) +
30. SUBSTRING(@hexstring, @secondint+1, 1)
31. SELECT @i = @i + 1
32. END
33. SELECT @hexvalue = @charvalue
34. GO
36. IF OBJECT\_ID ('sp\_help\_revlogin') IS NOT NULL
37. DROP PROCEDURE sp\_help\_revlogin
38. GO
39. CREATE PROCEDURE sp\_help\_revlogin @login\_name sysname = NULL AS
40. DECLARE @name sysname
41. DECLARE @type varchar (1)
42. DECLARE @hasaccess int
43. DECLARE @denylogin int
44. DECLARE @is\_disabled int
45. DECLARE @PWD\_varbinary varbinary (256)
46. DECLARE @PWD\_string varchar (514)
47. DECLARE @SID\_varbinary varbinary (85)
48. DECLARE @SID\_string varchar (514)
49. DECLARE @tmpstr varchar (1024)
50. DECLARE @is\_policy\_checked varchar (3)
51. DECLARE @is\_expiration\_checked varchar (3)
52. DECLARE @defaultdb sysname
54. IF (@login\_name IS NULL)
55. DECLARE login\_curs CURSOR FOR
56. SELECT p.sid, p.name, p.type, p.is\_disabled, p.default\_database\_name, l.hasaccess, l.denylogin FROM
57. sys.server\_principals p LEFT JOIN sys.syslogins l
58. ON ( l.name = p.name ) WHERE p.type IN ( 'S', 'G', 'U' ) AND p.name <> 'sa'
59. ELSE
60. DECLARE login\_curs CURSOR FOR
61. SELECT p.sid, p.name, p.type, p.is\_disabled, p.default\_database\_name, l.hasaccess, l.denylogin FROM
62. sys.server\_principals p LEFT JOIN sys.syslogins l
63. ON ( l.name = p.name ) WHERE p.type IN ( 'S', 'G', 'U' ) AND p.name = @login\_name
64. OPEN login\_curs
65. FETCH NEXT FROM login\_curs INTO @SID\_varbinary, @name, @type, @is\_disabled, @defaultdb, @hasaccess, @denylogin
66. IF (@@fetch\_status = -1)
67. BEGIN
68. PRINT 'No login(s) found.'
69. CLOSE login\_curs
70. DEALLOCATE login\_curs
71. RETURN -1
72. END
73. SET @tmpstr = '/\* sp\_help\_revlogin script '
74. PRINT @tmpstr
75. SET @tmpstr = '\*\* Generated ' + CONVERT (varchar, GETDATE()) + ' on ' + @@SERVERNAME + ' \*/'
76. PRINT @tmpstr
77. PRINT ''
78. WHILE (@@fetch\_status <> -1)
79. BEGIN
80. IF (@@fetch\_status <> -2)
81. BEGIN
82. PRINT ''
83. SET @tmpstr = '-- Login: ' + @name
84. PRINT @tmpstr
85. IF (@type IN ( 'G', 'U'))
86. BEGIN -- NT authenticated account/group
87. SET @tmpstr = 'CREATE LOGIN ' + QUOTENAME( @name ) + ' FROM WINDOWS WITH DEFAULT\_DATABASE = [' + @defaultdb + ']'
88. END
89. ELSE BEGIN -- SQL Server authentication
90. -- obtain password and sid
91. SET @PWD\_varbinary = CAST( LOGINPROPERTY( @name, 'PasswordHash' ) AS varbinary (256) )
92. EXEC sp\_hexadecimal @PWD\_varbinary, @PWD\_string OUT
93. EXEC sp\_hexadecimal @SID\_varbinary,@SID\_string OUT
95. -- obtain password policy state
96. SELECT @is\_policy\_checked = CASE is\_policy\_checked WHEN 1 THEN 'ON' WHEN 0 THEN 'OFF' ELSE NULL END FROM sys.sql\_logins WHERE name = @name
97. SELECT @is\_expiration\_checked = CASE is\_expiration\_checked WHEN 1 THEN 'ON' WHEN 0 THEN 'OFF' ELSE NULL END FROM sys.sql\_logins WHERE name = @name
99. SET @tmpstr = 'CREATE LOGIN ' + QUOTENAME( @name ) + ' WITH PASSWORD = ' + @PWD\_string + ' HASHED, SID = ' + @SID\_string + ', DEFAULT\_DATABASE = [' + @defaultdb + ']'
100. IF ( @is\_policy\_checked IS NOT NULL )
101. BEGIN
102. SET @tmpstr = @tmpstr + ', CHECK\_POLICY = ' + @is\_policy\_checked
103. END
104. IF ( @is\_expiration\_checked IS NOT NULL )
105. BEGIN
106. SET @tmpstr = @tmpstr + ', CHECK\_EXPIRATION = ' + @is\_expiration\_checked
107. END
108. END
109. IF (@denylogin = 1)
110. BEGIN -- login is denied access
111. SET @tmpstr = @tmpstr + '; DENY CONNECT SQL TO ' + QUOTENAME( @name )
112. END
113. ELSE IF (@hasaccess = 0)
114. BEGIN -- login exists but does not have access
115. SET @tmpstr = @tmpstr + '; REVOKE CONNECT SQL TO ' + QUOTENAME( @name )
116. END
117. IF (@is\_disabled = 1)
118. BEGIN -- login is disabled
119. SET @tmpstr = @tmpstr + '; ALTER LOGIN ' + QUOTENAME( @name ) + ' DISABLE'
120. END
121. PRINT @tmpstr
122. END
123. FETCH NEXT FROM login\_curs INTO @SID\_varbinary, @name, @type, @is\_disabled, @defaultdb, @hasaccess, @denylogin
124. END
125. CLOSE login\_curs
126. DEALLOCATE login\_curs
127. RETURN 0
128. GO

**Note** This script creates two stored procedures in the **master** database. The procedures are named **sp\_hexadecimal** and **sp\_help\_revlogin**.

1. Run the following statement:

EXEC sp\_help\_revlogin

The output script that the **sp\_help\_revlogin** stored procedure generates is the login script. This login script creates the logins that have the original Security Identifier (SID) and the original password.

1. On server B, start SQL Server Management Studio, and then connect to the instance of SQL Server to which you moved the database.  
     
   **Important** Before you go to step 5, review the information in the "Remarks" section.
2. Open a new Query Editor window, and then run the output script that is generated in step 3.

Remarks

Review the following information before you run the output script on the instance on server B:

* If you try to create a new SQL Server 2012 login by using a pre-SQL Server 2000 login that is scripted, you receive the following error:

Msg 15021, Level 16, State 2, Line 1  
Invalid value given for parameter PASSWORD. Specify a valid parameter value.

**Note** You receive this error in SQL Server 2012 because of the 16-byte password hash that is supplied for the CREATE LOGIN and ALTER LOGIN statements.   
  
To resolve this issue on a server that is running SQL Server 2012, create a login that has a blank password. To do this, run the following script:

CREATE LOGIN [Test] WITH PASSWORD = '', SID = 0x90FD605DCEFAE14FAB4D5EB0BBA1AECC,   
DEFAULT\_DATABASE = [master], CHECK\_POLICY = ON, CHECK\_EXPIRATION = OFF

After you create the login that has a blank password, the user can change the password at the next login attempt.

* A password can be hashed in three ways:
  + **VERSION\_LEGACY**: This hash is a 16-byte pre-SQL Server 2000 hash.
  + **VERSION\_SHA1**: This hash is generated by using the SHA1 algorithm and is used in SQL Server 2000 through SQL Server 2008 R2.
  + **VERSION\_SHA2**: This hash is generated by using the SHA2 512 algorithm and is used in SQL Server 2012.
* In SQL Server 2008 R1 and in earlier versions, pre-SQL Server 2000 password hashes were supported. When a user logged in by using a password that used a pre-SQL Server 2000 hash, the hash was upgraded to use the SHA1 password hash.
* If a user who has a password that uses the pre-SQL Server 2000 hash exists on a server that is running SQL Server 2008 R2, this means that the user has not logged in to that server.
* Review the output script carefully. If server A and server B are in different domains, you have to change the output script. Then, you have to replace the original domain name by using the new domain name in the CREATE LOGIN statements. The integrated logins that are granted access in the new domain do not have the same SID as the logins in the original domain. Therefore, users are orphaned from these logins. For more information about how to resolve these orphaned users, click the following article number to view the article in the Microsoft Knowledge Base:

[240872](http://support.microsoft.com/kb/240872)

(http://support.microsoft.com/kb/240872/ )

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If server A and server B are in the same domain, the same SID is used. Therefore, users are unlikely to be orphaned.

* In the output script, the logins are created by using the encrypted password. This is because of the HASHED argument in the CREATE LOGIN statement. This argument specifies that the password that is entered after the PASSWORD argument is already hashed.
* By default, only a member of the **sysadmin** fixed server role can run a SELECT statement from the **sys.server\_principals** view. Unless a member of the **sysadmin** fixed server role grants the necessary permissions to the users, the users cannot create or run the output script.
* The steps in this article do not transfer the default database information for a particular login. This is because the default database may not always exist on server B. To define the default database for a login, use the ALTER LOGIN statement by passing in the login name and the default database as arguments.
* **Case-insensitive server A and case-sensitive server B**: The sort order of server A may be case-insensitive, and the sort order of server B may be case-sensitive. In this case, users must type the passwords in all uppercase letters after you transfer the logins and the passwords to the instance on server B.  
    
  **Case-sensitive server A and case-insensitive server B**: The sort order of server A may be case-sensitive, and the sort order of server B may be case-insensitive. In this case, users cannot log in by using the logins and the passwords that you transfer to the instance on server B unless one of the following conditions is true:
  + The original passwords contain no letters.
  + All letters in the original passwords are uppercase letters.

**Case-sensitive or case-insensitive on both servers**: The sort order of both server A and server B may be case-sensitive, or the sort order of both server A and server B may be case-insensitive. In these cases, the users do not experience a problem.

* A login that already is in the instance on server B may have a name that is the same as a name in the output script. In this case, you receive the following error message when you run the output script on the instance on server B:

Msg 15025, Level 16, State 1, Line 1  
The server principal '*MyLogin*' already exists.

Similarly, a login that already is in the instance on server B may have a SID that is the same as a SID in the output script. In this case, you receive the following error message when you run the output script on the instance on server B:

Msg 15433, Level 16, State 1, Line 1  
Supplied parameter sid is in use.

Therefore, you must do the following:

* + Review the output script carefully.
  + Examine the contents of the **sys.server\_principals** view in the instance on server B.
  + Address these error messages as appropriate.
* In SQL Server 2005, the SID for a login is used to implement database-level access. A login may have different SIDs in different databases on a server. In this case, the login can only access the database that has the SID that matches the SID in the **sys.server\_principals** view. This problem can occur if the two databases are combined from different servers. To resolve this problem, manually remove the login from the database that has a SID mismatch by using the DROP USER statement. Then, add the login again by using the CREATE USER statement.

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**http://support.microsoft.com/library/images/support/en-us/20x20_grey_minus.png**[References](javascript:void(0);)

For more information about how to troubleshoot orphaned users, go to the [Troubleshoot Orphaned Users](http://msdn2.microsoft.com/en-us/library/ms175475.aspx)

(http://msdn2.microsoft.com/en-us/library/ms175475.aspx)

Microsoft Developer Network (MSDN) website.