SQL Server Database Permissions
Kofax Capture 10.0.1 R3 (10.0, Service Pack 1, Release 3) Changes and Requirements
Application Note

Date	February 11, 2014
Applies To	Kofax Capture 10.0.1 R3 (10.0, Service Pack 1, Release 3) and higher with SQL Server 2005 or higher
Summary	This application note provides information regarding required SQL Server permissions for Kofax Capture 10.0.1 R3 (10.0, Service Pack 1, Release 3)
Revision	1.5

Overview

Beginning with Kofax Capture 10.0.1 R3 (10.0, Service Pack 1, Release 3), changes to database security have been made. This document discusses these changes and provides the requirements to successfully configure and utilize Kofax Capture in a SQL Server environment.

IMPORTANT!

This application note only applies if the Capture Database has been migrated to SQL Server. If the Standard Database configuration is used, then the following changes do not apply.

Database Changes

Kofax Capture 10.0 Service Pack 1 R3 contains two main changes to the Capture database that have new user requirements:

- The ACSystemRole Application role has been removed.
    - This has been replaced with the new KCSystemDbRole Database Role.
    - KCSystemDbUser is a new user that is a member of the KCSystemDbRole.

- A new query to check if the database is in Multi User mode is utilized.
    - ALTER DATABASE <CaptureDatabase> SET MULTI_USER WITH NO_WAIT
    - The old method was to use the stored procedure *sp_dboption* which has been deprecated by Microsoft.

As a consequence of these changes, all users must be given the following permissions for everyday use:

- Permission to IMPERSONATE the KCSystemDbUser.
- Permission to ALTER the Capture Database.

ACSystemRole Application Role Removed

The ACSystemRole Application Role is replaced by the KCSystemDbRole Database Role. A new user is created, KCSystemDBUser. This user is configured without permission to directly log into the database. This permits administrators to create KC 10 users with limited access to SQL Server. When necessary, the login user will impersonate the KCSystemDBUser when elevated permissions are required within the database. This is all done programmatically by Kofax Capture and is transparent to the end user.

The KCSystemDbRole is configured with all the permissions described in the SQL Server Database Permissions for Use with Kofax Capture 9 Technical Note.

Role/User	Purpose
KCSystemDbRole/KCSystemDbUser	This role primarily aims for ordinary Capture's modules' everyday use; it will be granted with enough permission to guarantee that every Capture module can run normally.

Multi-user Mode Check

Previous to KC 10.0.1 R3, the method used to check if the Capture Database is in Multi User mode utilized the Microsoft SQL Server stored procedure *sp_dboption*. This stored procedure has been deprecated by Microsoft starting with SQL Server 2012. Microsoft recommends using ALTER DATABASE instead. See the important note at the top of this Microsoft article.

Audit Login	-- network protocol: LPC set quoted_identifier on ...	Kofax Capture Batch Manager
SQL:BatchStarting	ALTER DATABASE Capture10 SET MULTI_USER WITH NO_WAIT	Kofax Capture Batch Manager
SQL:BatchCompleted	ALTER DATABASE Capture10 SET MULTI_USER WITH NO_WAIT	Kofax Capture Batch Manager

> **NOTE:** Only the Capture Database is affected by this change and has no impact to other databases on the database server.

How to IMPERSONATE the KCSystemDbUser

Create an account in SQL Server that will be used to connect to the Capture Database. If *Windows authentication using the network login ID* is selected as the Authentication method to the Capture Database, similar permissions must be applied to the Windows Users.
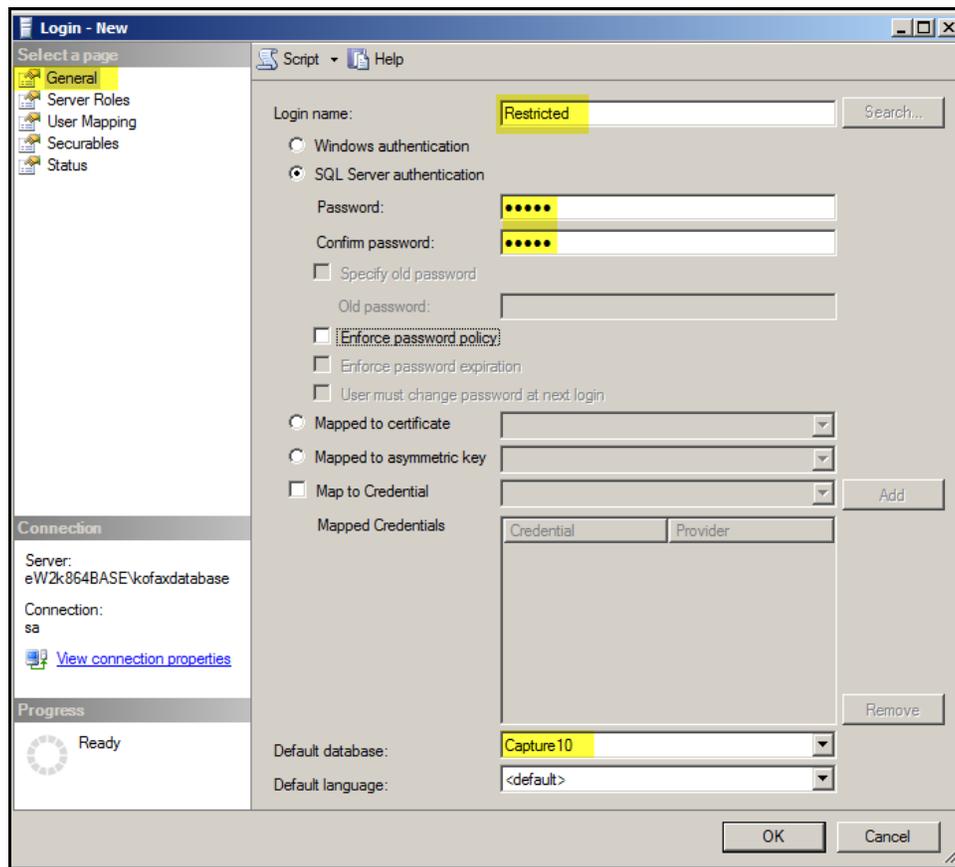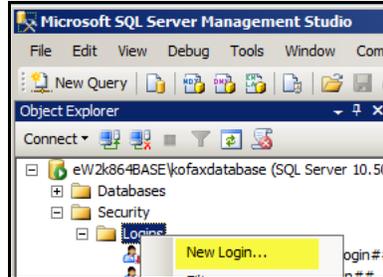
In the following examples, SQL Server authentication is used with a restricted user named *Restricted*. The database name used in the following example is *Capture10*.
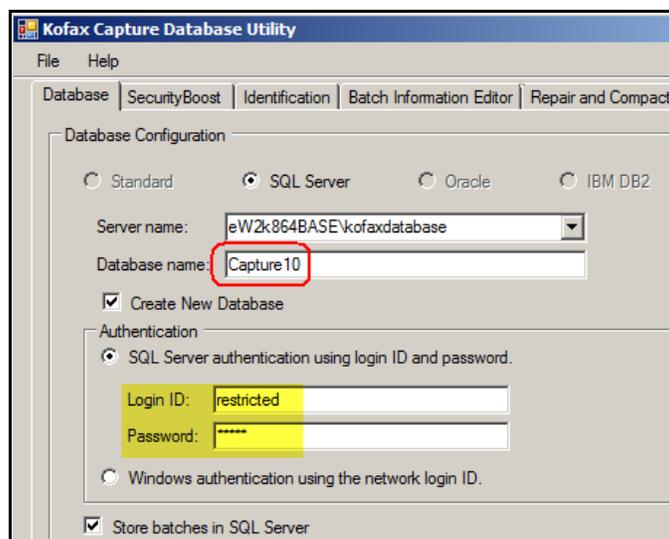
1. Ensure that the default database and User Mapping settings are configured for use with the Capture Database.

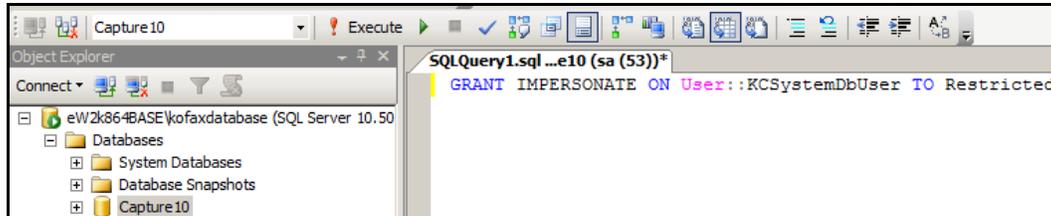2. Click OK.

3. Grant the permission to allow impersonation of the KCSystemDbUser by executing the following query:

> GRANT IMPERSONATE ON User::KCSystemDbUser TO <User>

where <User> is the name of the account. In the example below, the IMPERSONATE permission is granted to the "Restricted" user created in the previous step.

> GRANT IMPERSONATE ON User::KCSystemDbUser TO Restricted

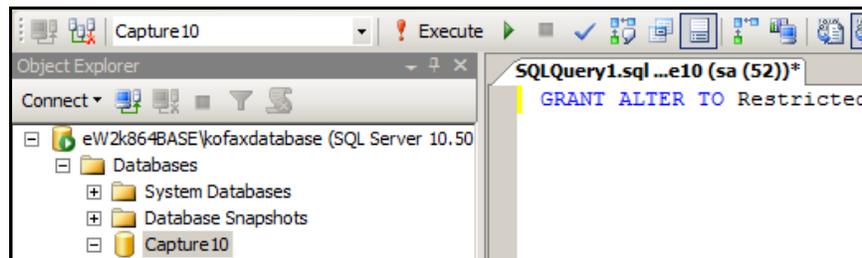4. Verify that the Impersonate permission is successfully granted.

How to Grant ALTER Permission to Users

Grant the ALTER permission by executing the following query:

> GRANT ALTER TO <User>

where <User> is the name of the account. In the example below, the ALTER Permission is granted to the "Restricted" user created in the previous step.

> GRANT ALTER TO Restricted

Verify that the ALTER permission is successfully granted.

Troubleshooting

The following are common error messages and steps to resolve them.

Error 1. [4006] KdoLib: Error executing SQL command. Cannot execute as the database principal because the principal "KCSystemDbUser" does not exist, this type of principal cannot be impersonated, or you do not have permission. (15517)
(Line: 1)
(IF database_principal_id('KCSystemDbUser') IS NOT NULL
BEGIN   EXECUTE AS USER='KCSystemDbUser';
END)
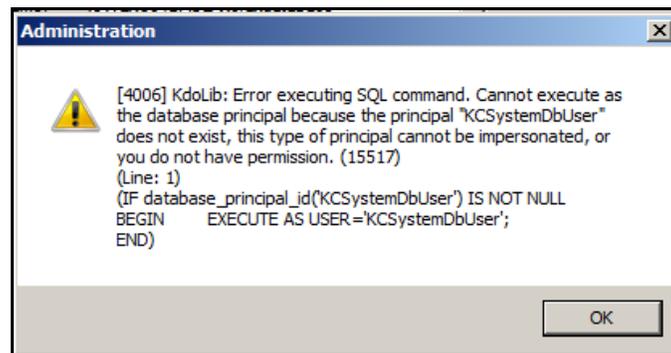
The above error is encountered when attempting to connect to the Capture database with a user that does not have the permission to IMPERSONATE the KCSystemDbUser. This is a new requirement. To grant this permission, execute the following query:

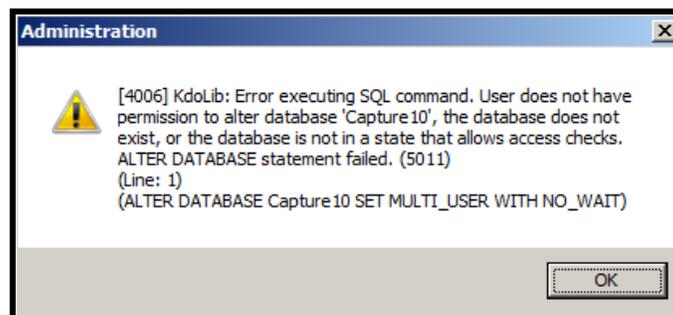GRANT IMPERSONATE ON User::KCSystemDbUser TO Restricted

In the query above, "Restricted" is the name of the user we are granting the IMPERSONATE permission to. Replace "Restricted" with the name of your user that requires this permission.

Error 2. [4006] KdoLib: Error executing SQL command. User does not have permission to alter database 'Capture 10', the database does not exist, or the database is not in a state that allows access checks.
ALTER DATABASE statement failed. (5011)
(Line: 1)
(ALTER DATABASE Capture 10 SET MULTI_USER WITH NO_WAIT)

The above error is encountered when attempting to connect to the Capture database with a user that does not have the ALTER permission. This is a new requirement. To grant this permission, execute the following query:

GRANT ALTER TO Restricted

In the query above, "Restricted" is the name of the user we are granting the ALTER permission to. Replace "Restricted" with the name of your user that requires this permission.

Error 3. [4009] KdoLib: Error getting data reader from stored procedure. The EXECUTE permiss was denied on the object 'procGetBatchCount', database '<dbName>', schema 'dbo'. (229)

(Line: 1)

(procGetBatchCount)
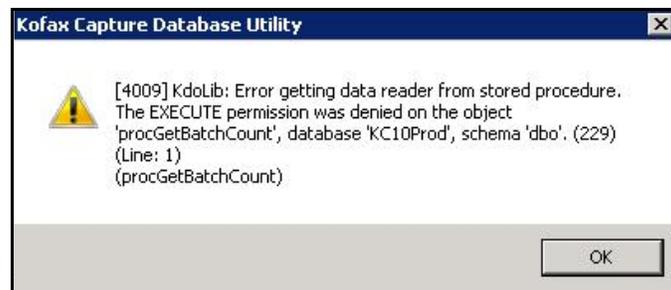
The above error is encountered when elevated permissions are required, but not granted. This may happen when attempting to change certain information in DBUtil which requires elevated permissions.

Changes in Application Note

Changes in v1.5 of Application Note

Removed step that required adding the restricted user to the KCSystemDBRole. This step is not required for daily use (DBUtil is not considered part of daily use). Impersonation is all that is required.