TN 1347048 - ERO, Optimise2 and Controller10.1 with SQL2008
Instructions for I.T. administrator

Overview

"Enhanced Reporting Optimisation" (also known as "ERO" and "Optimise2") was developed to speed up certain types of user-defined reports (mainly Excel link reports).

- For full details, see Technote 1347048: http://www-01.ibm.com/support/docview.wss?uid=swg21347048

The general idea is to use SQL "bulk insert" to perform multiple SQL inserts simultaneously (rather than queuing them and running them one-by-one). By doing this, certain Excel link reports can be sped up massively (e.g. **up to 5 times faster!**)

There are **two** separate parts that need to be done do implement ERO/Optimise2.

- Ensure that the Controller **I.T. environment** is configured to allow Optimise2 to work
  - This is done by the I.T. administrator
  - This needs to be done for ***each*** separate database that the end-users will use, therefore you will need to remember to perform this step if a new database is created

- Switch on the ERO "flag" **inside the application itself**
  - This is performed by the Controller "super-user(s)" themselves
  - This needs to be done for ***each*** separate report that they wish to use Optimise2/ERO with
  - For instructions on this, see separate document "Technote_1347048 - How to configure Reports to use Optimise2.pdf".

This document shall demonstrate how to perform the I.T. tasks.

NOTE:

- Optimise2 will work on all supported database platforms (e.g. MS SQL 2005, SQL 2008, Oracle 10G and Oracle 11G)
  - However, for the sake of simplicity, this document shall assume that you are using Controller with SQL 2008 server.
  - If using SQL 2005, the instructions/screens are virtually identical.

Details

(1) Configure your SQL Server to allow the SQL login to create "bulk inserts" into 'TEMPDB'

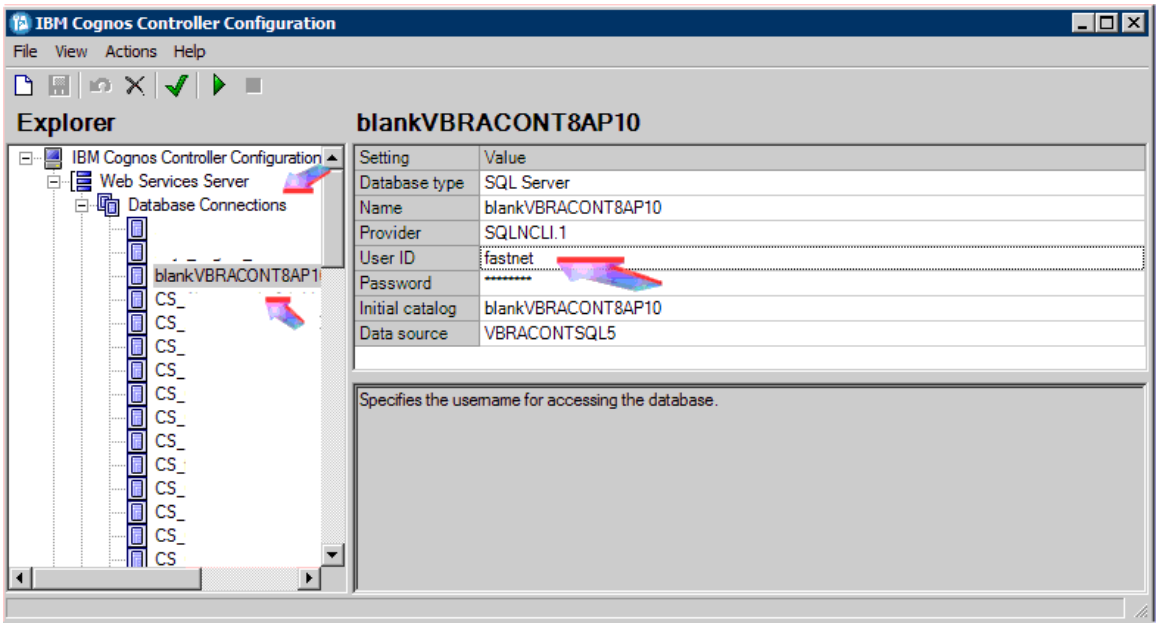
You need to give your Controller database's SQL login the correct "role" and "database access" rights.

More Information:

The SQL login (e.g. 'fastnet') requires 'dbowner' rights to tempdb to allow the Optimise2 feature to work. The way that SQL works means that (by default) the user "fastnet" already will have read /write access to TEMPDB (regardless of whether we use Optimise2 or not). The reason why we specifically need dbowner rights is because of a confirmed Microsoft limitation in their SQL product. Specifically BULK INSERT (which is the technique behind Optimise2), requires dbowner rights.

The fact that fastnet is 'dbowner' for TEMPDB should not affect other (non-Controller) applications. Using Optimise2 should, in fact, affect other applications using the same SQL Server to a lesser extent than if Optimise2 was not used! By using Optimise2, temporary tables are created in tempdb for a shorter period of time (than if not using Optimise2), thus holding a shared resource for a shorter period of time (good).

First of all, check the name of your SQL login by launching "Controller Configuration" on your Controller application server, and opening the section "Database Connections" and highlighting the relevant connection name:



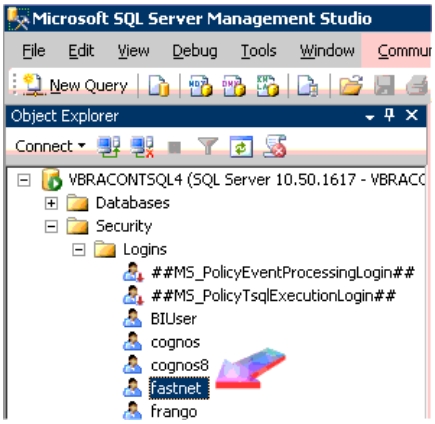
In the above example, the SQL login name is "fastnet".

Next, logon to the SQL 2008 server, and launch 'SQL Server Management Studio' from the Start Menu

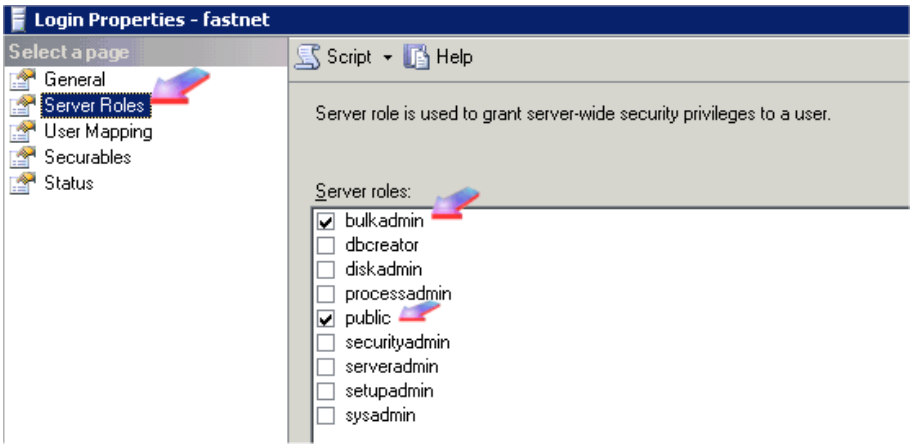
- Login to the server as an administrator

- Expand the <servername> - 'Security' – 'Logins'
- Locate the Controller SQL login (e.g. 'fastnet') that your Controller application server uses to connect to the database (you can check this inside 'Cognos Controller Configuration')

  TIP: this is *typically* "fastnet", but you *may* have a slightly different one (e.g. "controller" or "cognos" etc.)

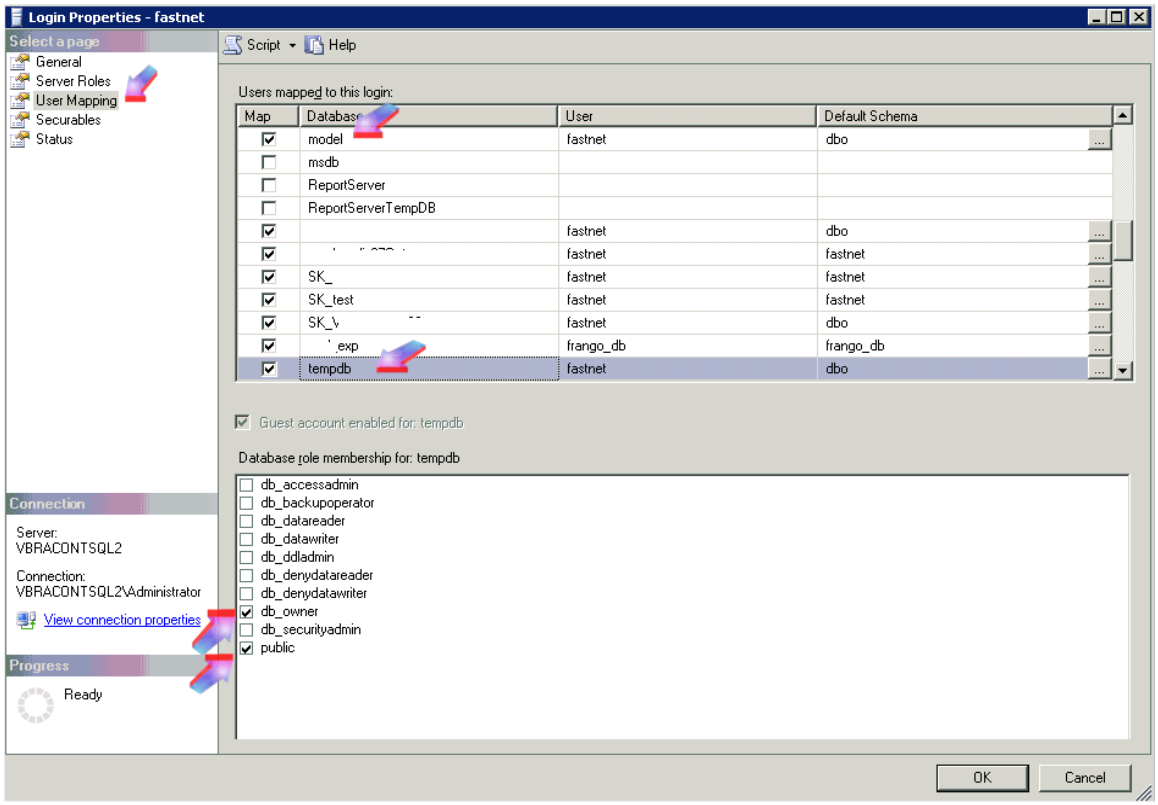


- Double-click on the SQL login name (e.g. "fastnet")
- Click on the "server roles" tab
- Ensure that **ONLY** the roles "bulkadmin" and 'public' are ticked:



TIP: For most customers it is vital that other roles (e.g. "sysadmin") are **NOT** ticked/enabled since this would cause Controller to fail !!

- Click on the "User Mapping" tab
- Select the database '**tempdb**'
- Ensure that the following 'role memberships' are ticked:
    - **db_owner**
    - **public**



- Select the database '**model**'
- Ensure that the following 'role memberships' are ticked:
    - **db_owner**
    - **public**

Alternative Method:

This step (adding "dbowner" to the database "model") is necessary because SQL will recreate 'tempdb' from a copy of 'model' whenever SQL is restarted. Therefore, any changes we made to tempdb would be lost after a reboot.

If the SQL DBA is uncomfortable/unwilling to perform this 'model' change step, then (as an alternative) they can run the following script (tested with SQL 2008 R2), which will automatically make the required change (to tempdb) when the SQL server is rebooted.

```
   USE master;
   GO
   EXEC sp_configure 'show advanced option', '1';
   RECONFIGURE WITH OVERRIDE
   GO
   EXEC sp_configure 'scan for startup procs', '1';
   RECONFIGURE WITH OVERRIDE
   GO
   CREATE PROC spAdduser
   AS
   exec tempdb..sp_adduser 'Fastnet', 'Fastnet', 'db_owner'
   GO
   -- set it to run at sql server start-up
exec sp_procoption N'spAdduser', 'startup', 'on'
```

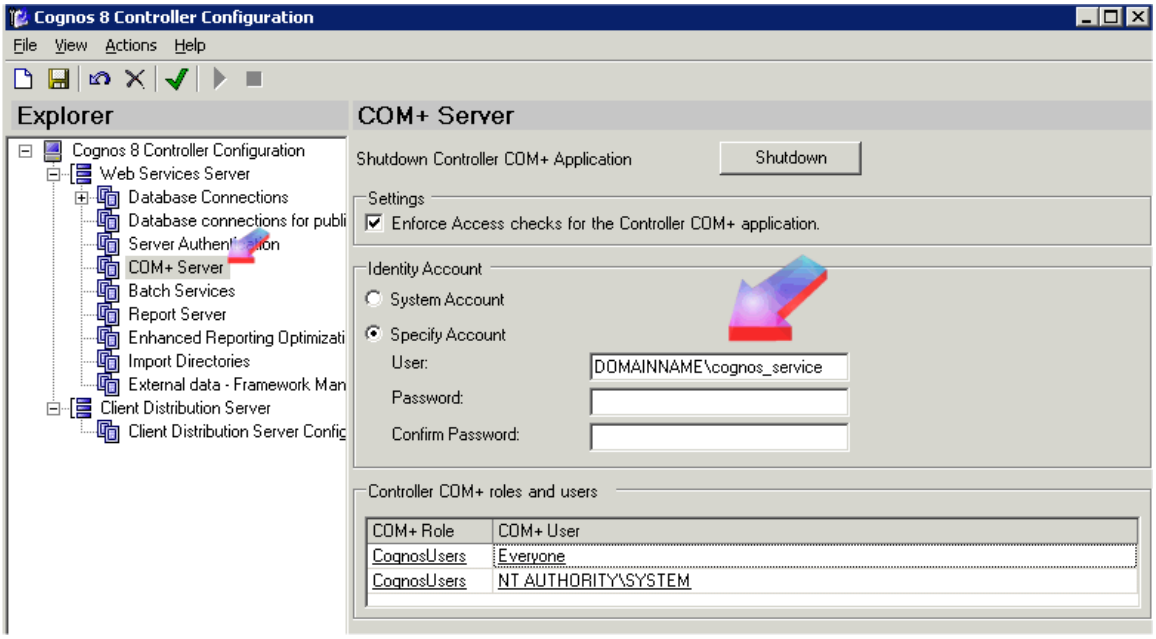
Naturally you will need to change the entries for '**Fastnet**' with the name of your SQL login.

(2) Ensure that your Controller "COM+" Windows user account has permission to interact with the SQL server

Controller is *designed* is that Optimise2 will use a "domain user" account for file access permissions.

- Therefore, the Controller "application" and "SQL" servers *should* be in the same Windows domain as each other.

The Controller COM+ Windows user account is the one that is listed inside "Cognos Controller Configuration" (on the Controller application server) here:



Make sure that this COM+ user (e.g. DOMAINNAME\cognos_service) belongs to the same domain that the SQL server belongs to.

TIP: If the COM+ user is from a different domain from the SQL server, then the workaround is to create/use a 'local' (non-Domain) user on both the Application server and Database server. The user must have exactly the same username/password.

- Then configure Controller to use this new **local** user as its COM+ user.

(3) Create a network share

Ideally the network share is located on the ***SQL*** server.

TIP: It is possible to use a network share located elsewhere (e.g. the Controller application server itself) but this is trickier to configure (harder to ensure that the permissions are correct).

- Therefore, the author recommends using a share on the SQL server.

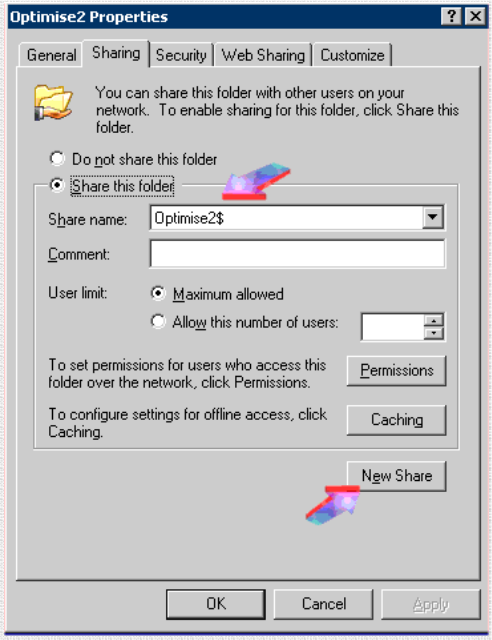
To do this:

- Logon to the SQL server as an administrator
- Create a new folder (e.g. `C:\Optimise2`) on the SQL server
- Share this folder (e.g. as "`Optimise2$`")

TIP: The instructions for how to share a folder vary on the operating system:

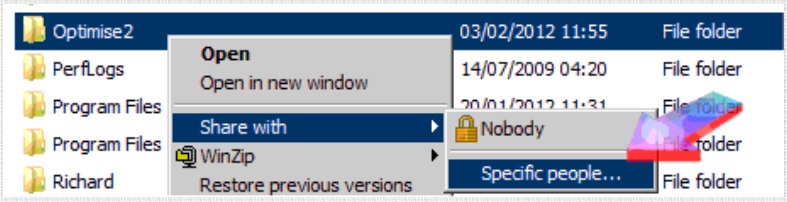
Windows 2003:

- Right-click on the folder, and choose "Sharing and Security"
- Click "New Share" and give it a sensible name (e.g. "Optimise2$")



Windows 2008:

- Right-click on the folder, and choose "Share With – Specific people".

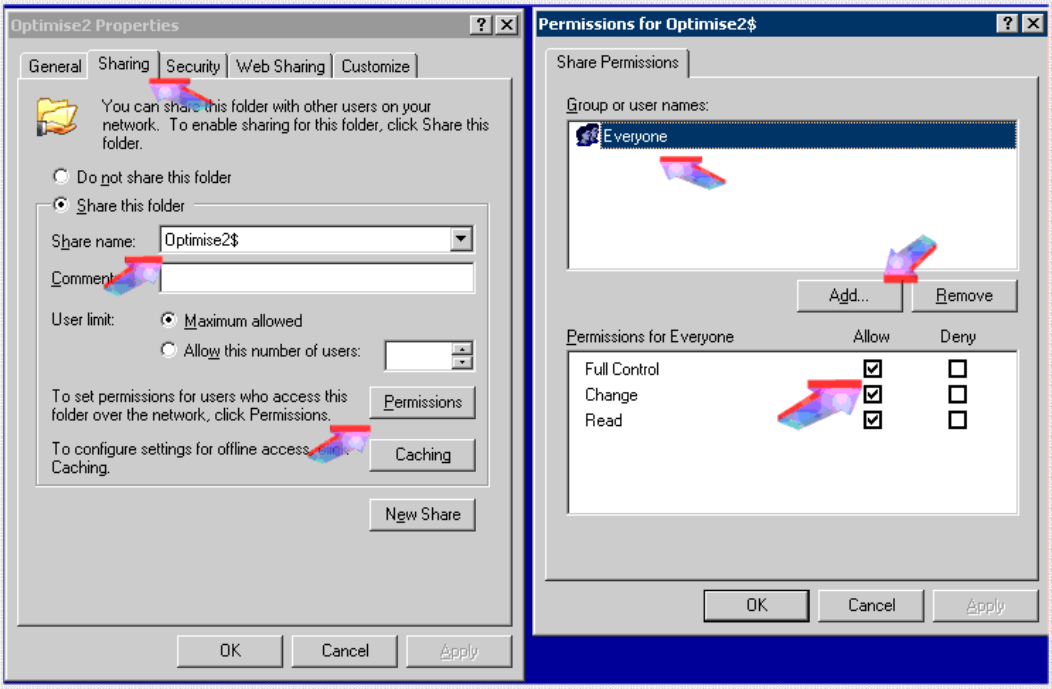


- Ensure that the **Controller COM+ user** (e.g. `Domain\Controller_service`) has **full control** permissions for the **share permissions**

TIP: The instructions for how to assign share permissions vary on the operating system:

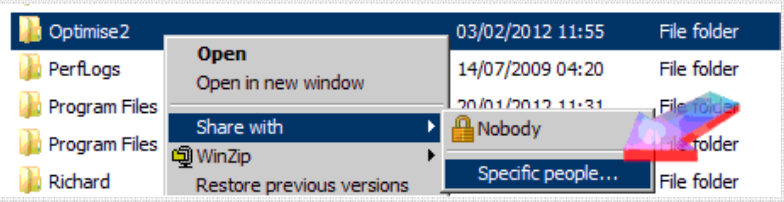
Windows 2003:

- Click on "Permissions" and ensure that your COM+ user is listed under "Group or user names" and has the box "Full Control" ticked:

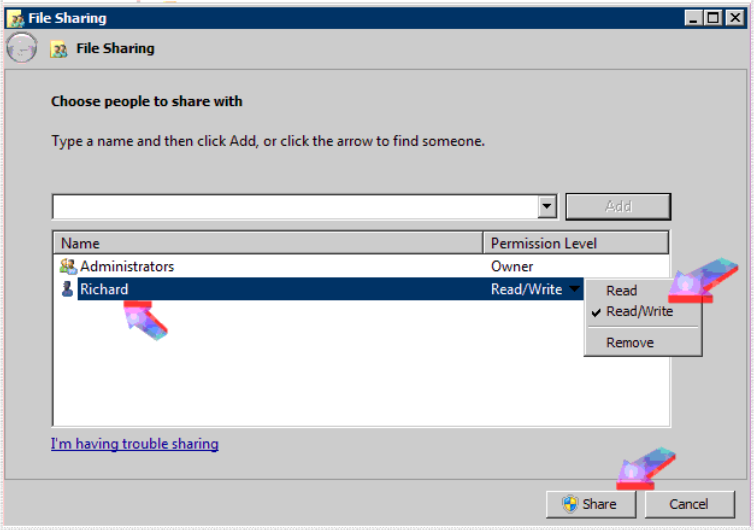


Windows 2008:

- Right-click on the folder, and choose "Share With – Specific people".



- Add the 'COM+ User' to the list of people, and ensure that "Read/Write" is selected, then click "Share":

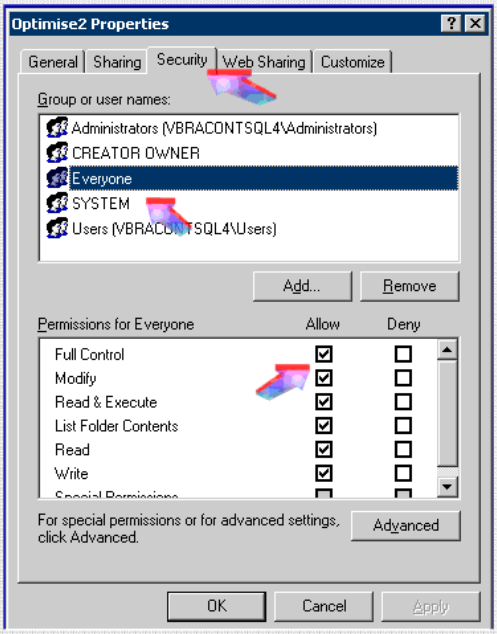


- Next, ensure that the **Controller COM+ user** has **full control NTFS permissions** to the **folder**

TIP: The instructions for how to modify NTFS permissions vary slightly depending on the operating system:

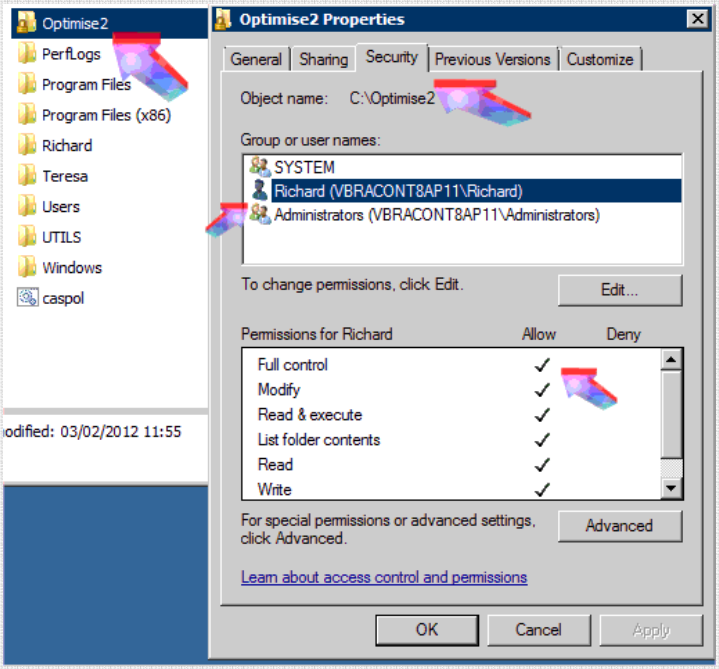
Windows 2003:

- Click on tab "Security"
- Ensure that the COM+ User has "Full Control" permissions ticked:



Windows 2008:

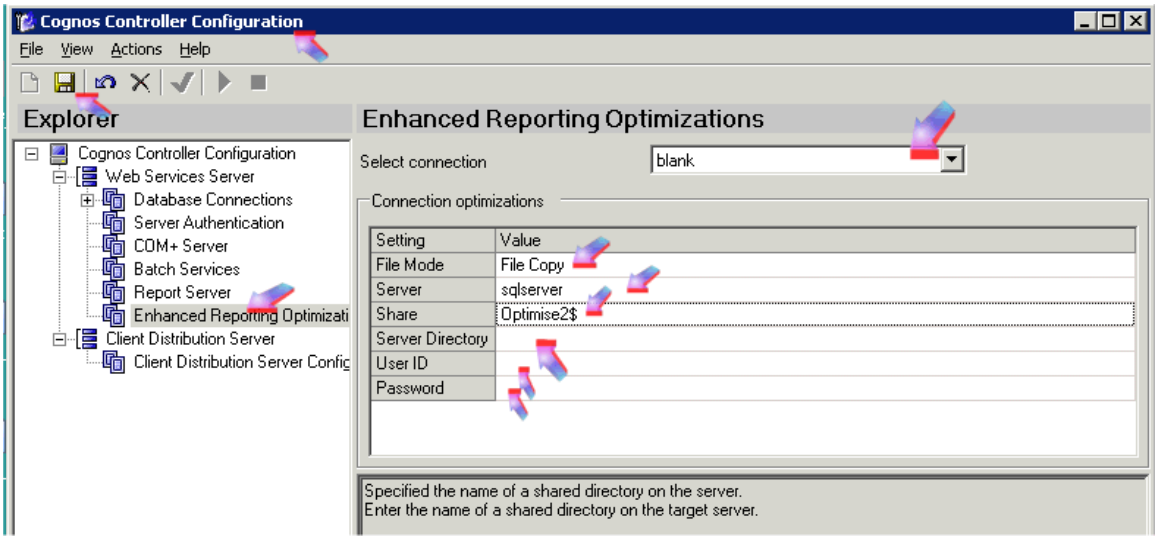
- Right-click on the folder, choose "properties"
- Click on "Security" tab and ensure that the COM+ user has "Full Control" ticked:



(4) Ensure that each database connection has Optimise2 settings configured

On the application server, launch Cognos Controller Configuration (from the start menu).

- Navigate to the section "Enhanced Report Optimisation"
- Fill in the details for your share, for example:



- Repeat the above step for **each and every** database connection listed inside 'select connection'

NOTE:

- File mode: For SQL databases, choose "file copy"
- Server: use the NetBIOS[1] name of the file server (e.g. the SQL server name)
- Share: The name of your share (e.g. "Optimise2$")
- Server directory: this can *typically* be left blank
  - However, in certain environments[2] you should have a subdirectory configured here for each database connection
- UserID: this can *typically* be left blank
  - However, in certain environments[3] you need to state the Windows username
  - e.g. `DOMAIN\Controller_system`
- Password: this can *typically* be left blank
  - However, in certain environments you need to state the COM+ Windows user's password

[1] In many environments, using the FQDN name will cause issues
[2] Multiple simultaneous users in different databases, using same reports
[3] E.g. where APP server is *not* in same domain as SQL server

(5) Testing

Ask Superusers to test Optimise2 by using the instructions inside the separate document "Technote_1347048 - How to configure Reports to use Optimise2.pdf".

If you receive error messages, refer to the knowledgebase (http://www-947.ibm.com/support/entry/portal/Overview/Software/Information_Management/Cognos_Controller) for the solution.