

Proven Practice

Installing & Configuring IBM Cognos Controller 10.3.0 server

Product(s): IBM Cognos Controller

Area of Interest: Infrastructure

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Introduction

1.1 Purpose

This document is designed to be a simple/basic guide (complete with screenshots) for how to install a "standard" Controller 10.3.0 system from scratch.

- It is intended to be utilised by IBM Cognos (and partners) technical consultants, to help perform an installation of Controller 10.3.0 server in '**simple / standard**' environments.
- It is also possible for less-experienced people (for example customer's I.T. departments) to use this document too, **so long as**:
 - It will be a simple/standard implementation of Controller
 - The customer accepts responsibility for any problems that may arise from the use of this document

In other words, the customer accepts that IBM's recommendation is always to employ an experienced IBM Cognos Technical Consultant to help them install Controller. Employing an experienced IBM technical consultant will ensure that the risk is minimised of unexpected issues arising from an install or upgrade.

By following these "best practices" the intention is to make Controller installation as easy as possible, with the minimum of possibility for errors/issues. The author suggests that experienced technical consultants can also use this document as an 'aide-memoir', i.e. a concise set of instructions for installing the software as per current best practices, for typical situations.

1.2 Applicability

This document is based on installing Controller 10.3 (also known as 10.3.0), which was released 13th December 2016.

1.3 Exclusions and Exceptions

There are an infinite variety of possible customer I.T. environments/needs/specialist requirements. Therefore, IBM has intentionally made Controller flexible to give the customer many different ways to install Controller 10.3.0. Therefore the advice in this document may have to be modified by the reader to fit in with their specific needs/environment.

Although this document demonstrates proven practices suitable for most environments, it is not necessarily perfect for all environments.

Employing an experienced IBM Cognos technical consultant to upgrade your Controller server(s) is always the recommended & ideal scenario.

NOTE: This document was last updated by the author March 10th 2017.

- The latest version of this document can always be found here: <http://www-01.ibm.com/support/docview.wss?uid=swq21608353>

2 Important Notes, Tips and WARNINGS

2.1 Do not ignore/skip any sections of this document, unless you understand the consequences!

It is perfectly *possible* to install Controller and get it (initially) working without performing some of the steps that the author prescribes/recommends. However, customer feedback has confirmed that, unless you perform all of my recommended/extra steps, the customer's Controller system will NOT work well in the long-term. Therefore, throughout this document, there will be **hints & tips** in blue boxes and **VITAL** information inside red boxes such as these:

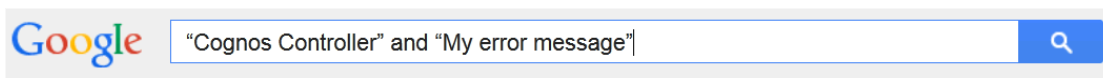
TIP: Ignoring the tips may cause the Controller system to be slow, unreliable or have long-term issues.

WARNING: If the information in these boxes is ignored, the Controller system is likely not to work at all correctly.

Many of the author's tips and recommendations refer to IBM's excellent knowledgebase, which contain the IBM "Technotes". This can be found here:

http://www-947.ibm.com/support/entry/portal/product/cognos/cognos_controller?productContext=933239745

- It is absolutely VITAL that the reader uses this **knowledgebase** resource, since it is an invaluable help for almost all issues.
- TIP: It is easy to search the Technotes by simply using 'Google'. For example, if you want to search for the error message "My error message" then run the following **Google search**, and the top results should be our Technotes:



In addition, most of the author's other **Proven Practice** documents can be found inside these Technotes.

- For example, see here for the latest version of this document: <http://www-01.ibm.com/support/docview.wss?uid=swg21608353>

2.2 Server name conventions – FQDN and NetBIOS

Throughout this document, the author shall talk about configurations that refer to the **<servername>** of your Controller server. There are two main conventions for server naming:

1. NetBIOS – for example 'MYSERVERNAME'
2. FQDN – for example 'MYSERVERNAME.uk.companyname.com'

Alternatively, you may even be using something else to refer to your servers. For example, you may want to use a "virtual" DNS name (for Disaster Recovery purposes). **Whatever naming convention that you choose, you **must** use the SAME (correct) version of your server name at **all** times, to retain consistency.**

WARNING: To summarise, customers should typically use NetBIOS or FQDN names **throughout their entire configuration/deployment**, but not both (a mixture).

Using a mixture of naming conventions will cause complications/problems later.

3 Initial Server Prerequisites

3.1 Server hardware recommendations

It is, of course, vital the customers deploy Controller on hardware that is sufficiently powerful to give the end users a good experience.

Please refer to the author's companion Proven Practice document 'Controller 10.3 Architecture and Server Sizing' for my server hardware recommendations (based on customer success/feedback). For example (for most customers) each Controller application server should typically have **at least** 4 CPU cores (ideally 8 cores) and **at least** 8Gb RAM (ideally 16Gb) assigned to it.

3.2 VMWare / ESX (and other virtual platforms)

Most customers choose to deploy Controller on virtual hardware (such as VMWare/ESX). However, please be aware that a number of customers have experiences **errors** (for example see Technote 1385378) **and performance problems** caused by poorly-configured/poorly-specified virtual server systems (ESX etc.).

TIP: The author has written many of his virtual server hints/tips/best-practices inside the following IBM Technote: <http://www-01.ibm.com/support/docview.wss?uid=swg21365257>

3.3 64-bit / 32-bit

Almost all of the Controller **server** is 64-bit, but there is a small portion of 32-bit code

There are two different Controller **clients**: 32-bit & 64-bit

- If your client device is running a 64-bit operating system then you need to install/use the 64-bit client (it will not allow you to install the 32-bit client on a 64-bit version of Windows).
- The 64-bit Controller client works with both 32-bit Excel and 64-bit Excel versions.

In addition, you should install **TM1 server** on a **64-bit server**.

3.4 Operating System

TIP: Full details of the supported environments for Controller **10.3** are here:
<http://www-01.ibm.com/support/docview.wss?uid=swg27048987>

Controller 10.3.0 is compatible with **Windows 2016 Server**. Although other environments are supported, this document shall mainly assume that you are using **Windows 2016**.

3.5 Windows Patches

As a general best practice, ensure that your operating system is patched to the latest Microsoft Windows patches. pack, for example (at the time of writing):

- Older Windows products (for example Windows 2008 **original release** & R2) had service packs (SP2 & SP1 respectively), but current Microsoft Windows policy is to not release service packs, but instead release regular rollup patches.
- ⇒ Make sure that your operating system is patched to the very latest fixes.

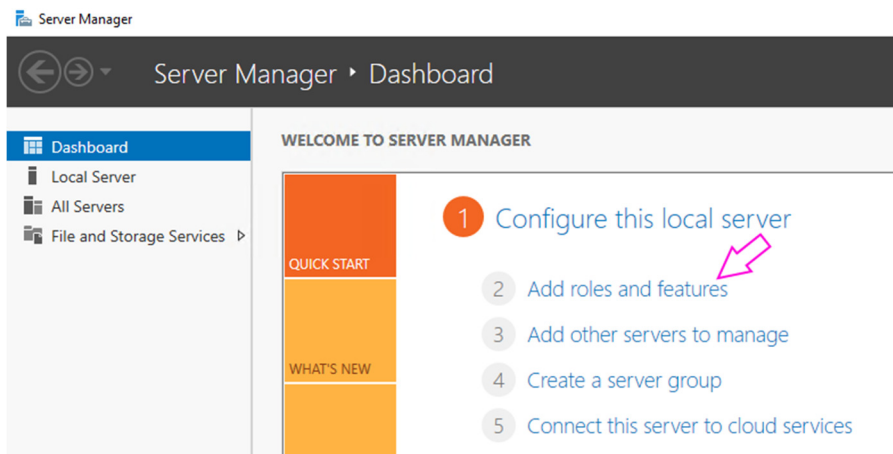
3.6 Required Windows Components – Microsoft IIS webserver & Enable network COM+ access

TIP: The following are **Windows 2016** instructions. If you are using Windows **2012** R1 or R2 then the screens are slightly different.

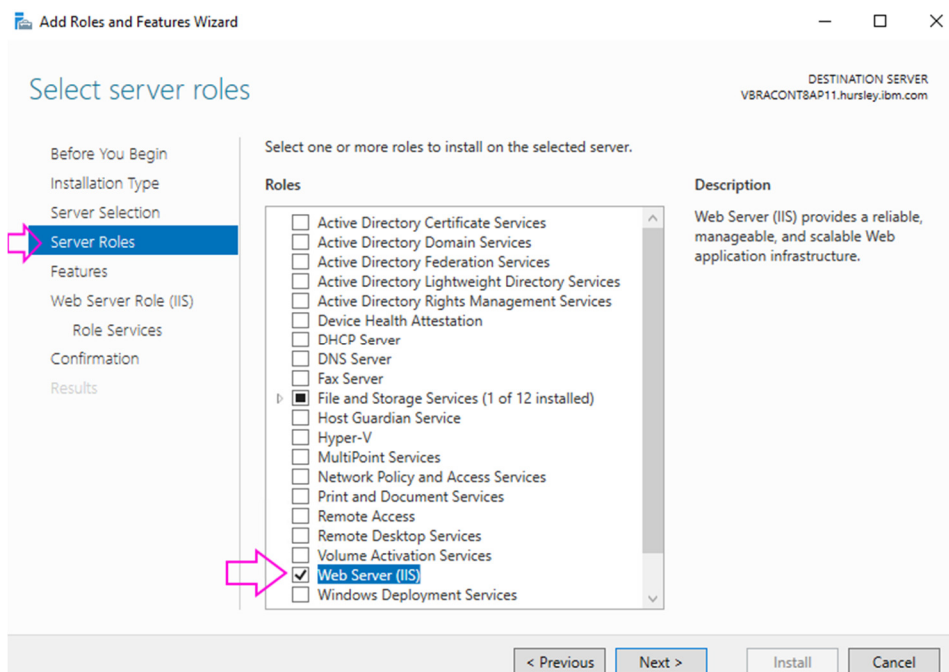
If you are using Windows **2008** then the author recommends you refer to the documentation I created for older versions of Controller (for example my guide "*Installing & Configuring IBM Cognos Controller 10.1.1 server - Proven Practice*").

By default, several required Windows components are not installed/enabled. Therefore:

- Click 'Start – **Server Manager**'
- Click "**Add Roles and Features**":

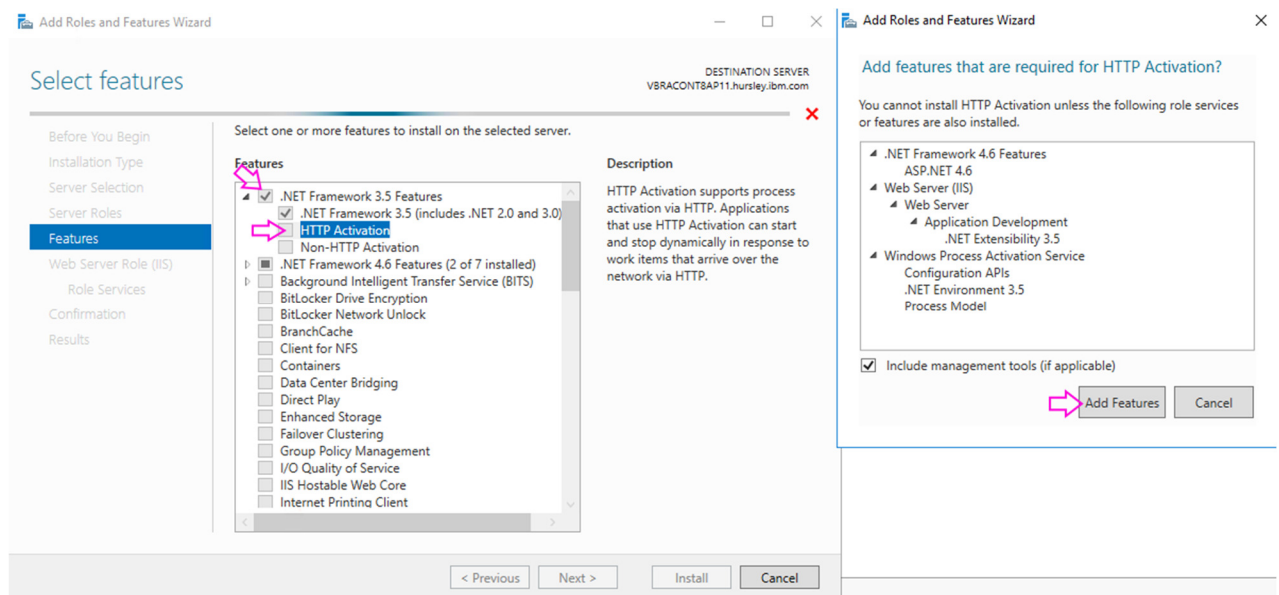


- Choose "**Role-based or feature-based installation**", and click Next.
- Select your server, and click Next.
- Select/tick **Web Server (IIS)** (if it is not already installed) and click 'Add Features'.

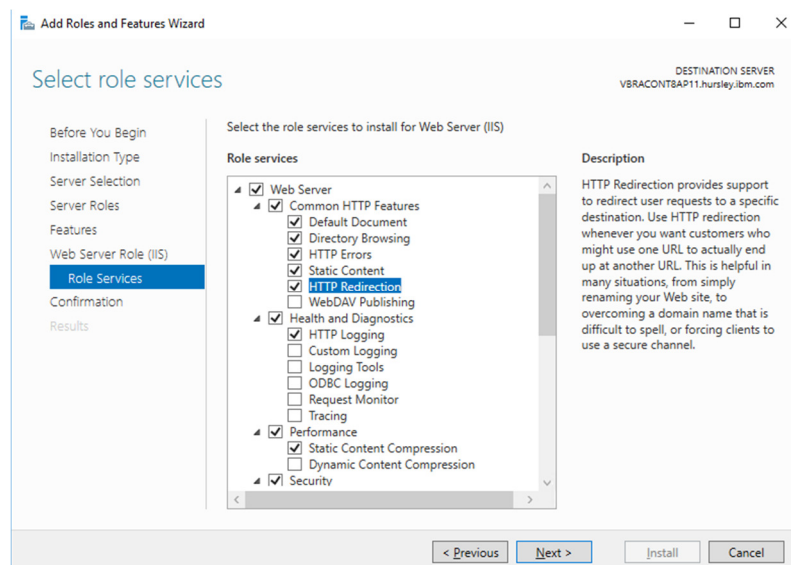


- Click **Next**

- Inside "Features" tick **".NET Framework 3.5 Features"**
- Tick **".NET Framework 3.5 (includes..."** and also **"HTTP Activation"**
- Tick **"Add Features"**:

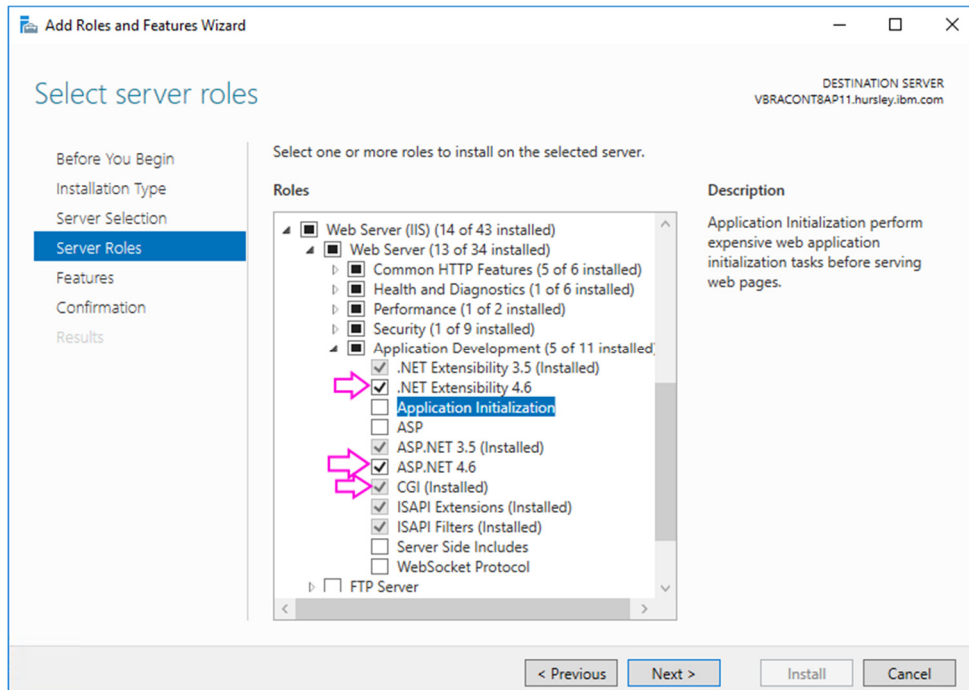


- Click **Next, Next.**
- When you reach the 'Role Services' section for **IIS**, ensure the following (including 'HTTP Redirection') are selected:



- Click **Next**
- Click **Install.**

- Afterwards, relaunch the same “Add Roles and Features” wizard
- Expand ‘Web Server ... Web Server ... Application Development’, and tick/select **CGI** (if it is not already selected)
- Also tick “ASP.NET 4.6”, so it should look similar to:



- Click **Next, Next, Install.**

Launch <http://servername> and ensure that the default website appears successfully **before** proceeding to the next stage.

3.7 Other Microsoft Software

Install each the following Microsoft software/components on your application server:

- **MS Internet Explorer 11**

Microsoft no longer support older versions.

- **MS Excel 2010 (32-bit), 2013 (32 or 64-bit) or 2016 (32 or 64-bit)**

Although it is not strictly 100% necessary to install MS Office on your application server, [the author recommends that you install Microsoft Excel on the application server.](#)

- This is because it makes testing immediately after the installation (plus throughout the future lifetime of the Controller system) very easy

If you choose to use Office 365, make sure you do NOT install it via 'click to run'. Instead, you must install it via the traditional/MSI method.

- For more details, see here: <http://www-01.ibm.com/support/docview.wss?uid=swg21984103>

After installing MS Office, please patch to the latest Microsoft Office patch version.

- **Microsoft Visual C++ 2010 SP1 Redistributable Package (x64)**

Launch the file "[vc_redist_x64.exe](#)" and perform a default install.

This file is currently downloadable from here:

<http://www.microsoft.com/en-gb/download/details.aspx?id=13523>

3.8 Database client software

IMPORTANT NOTE: Controller server contains mostly 64-bit code. However, a small portion - the COM+ subsystem - is still 32-bit.

- Therefore Controller requires **both the 32-bit and 64-bit versions** of the required pre-requisite third-party database client software

Luckily, SQL and DB2 database clients contain both the 32-bit and 64-bit versions in one package.

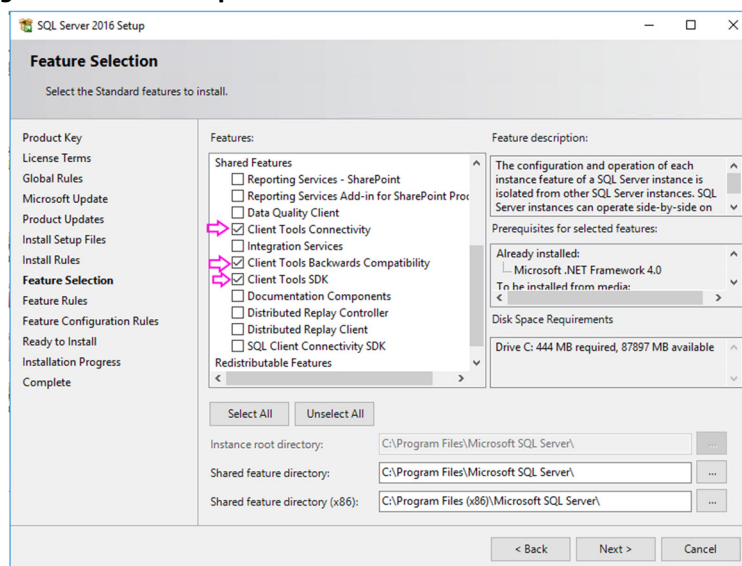
- However, if using **Oracle** you will need to manually install **both** packages separately.

Depending on which database platform you are using (SQL, Oracle or DB2), you will need to perform the steps listed below:

OPTION #1 – Microsoft SQL

If using **SQL 2016** as your database server:

- Insert **SQL 2016 (x64)** media and launch **setup.exe**
- Choose 'Installation' – 'New SQL Server stand-alone installation...'
- In the 'Feature Selection' screen, as a minimum tick the following:
 - **Client Tools Connectivity**
 - **Client Tools Backwards Compatibility**
 - **Client Tools SDK**
 - **Management Tools – Complete**



- Accept all the default values during the wizard

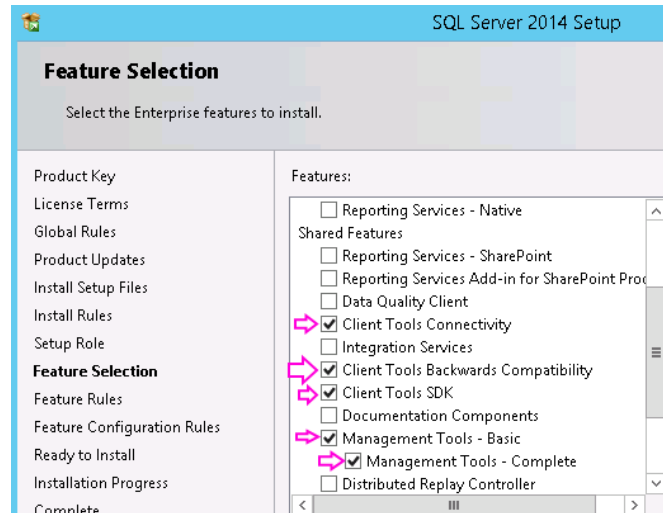
TIP: To make future administration potentially more convenient later, the author recommends to then:

- Browse to this website: <https://go.microsoft.com/fwlink/?LinkId=531355>
- Download the latest version of "SQL Server Management Studio (SSMS)" from the link. Double-click on the file ("SSMS-Setup-ENU.exe") and perform a default installation

~~~~~

If using **SQL 2014** as your database server:

- Insert **SQL 2014 (x64)** media and launch **setup.exe**
- Choose 'Installation' – 'New SQL Server stand-alone installation...'
- In the 'Feature Selection' screen, as a minimum tick the following:
  - **Client Tools Connectivity**
  - **Client Tools Backwards Compatibility**
  - **Client Tools SDK**
  - **Management Tools – Complete**

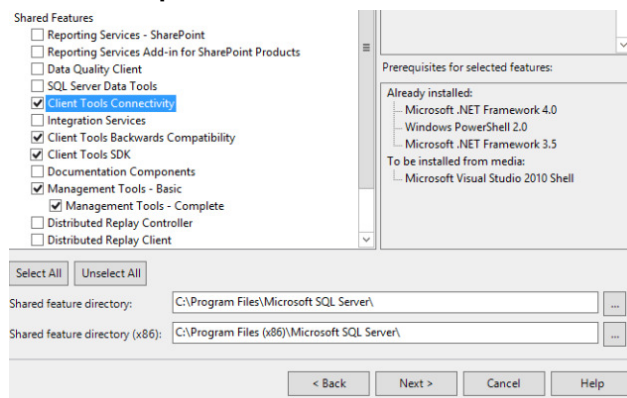


- Accept all the default values during the wizard

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If using **SQL 2012** as your database server:

- Insert **SQL 2012 (x86 and x64)** media and launch **setup.exe**
- Choose 'Installation' – 'New SQL Server stand-alone installation...'
- In the 'Feature Selection' screen, as a minimum tick the following:
 - **Client Tools Connectivity**
 - **Client Tools Backwards Compatibility**
 - **Client Tools SDK**
 - **Management Tools – Complete**



- Accept all the default values during the wizard
- After the product has finished installing, download latest service pack (for example SP1 for **64-bit** = **SQLServer2012SP1-KB2674319-x64-ENU.exe**) from Microsoft
- Double-click to upgrade the client tools to SP1, then reboot application server

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If using **SQL 2008** as your database server:

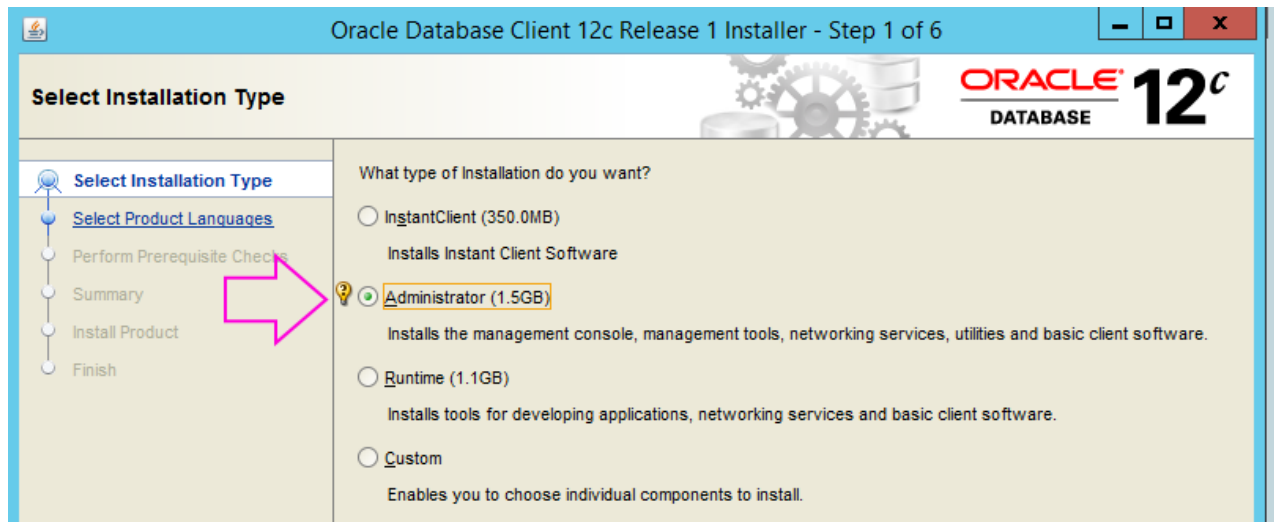
- Insert **SQL 2008 (x86, x64, ia64)** media and launch **setup.exe**
  - If necessary, this will automatically download .NET 3.5 SP1 from the internet and install it
- Afterwards, choose 'Installation' – 'New SQL Server stand-alone installation...'
- In the 'Feature Selection' screen, as a minimum tick the following:
  - **Client Tools Connectivity**
  - **Client Tools Backwards Compatibility**
  - **Client Tools SDK**
  - **Management Tools – Complete**
- Accept all the default values during the wizard
- After the product has finished installing, download latest service pack (for example SP2 for **R2 64-bit** = **SQLServer2008R2SP2-KB2630458-x64-ENU.exe**) from Microsoft
- Double-click to upgrade the client tools to SP2, then reboot application server
- If you are **not** going to publish Controller data to **Data Marts** (see blue box above) then you can skip the next step:
  - If you **do** have the SQL 2005 cd-rom media, then simply perform the same steps (see above) to install the SQL **2005** 'Workstation components, Books Online and development tools', and (as a best practice) patch to SQL 2005 **SP4**.
  - If you **do not** have the SQL 2005 cd-rom installation media, then download and install the components (e.g. "Microsoft SQL Server 2005 Backward Compatibility Components" = "**SQLServer2005\_BC.msi**"
    - see IBM Technote 1472432 for more details).

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OPTION #2 – Oracle

If using **Oracle 12c** as your database server (Controller 10.2.1 supports Oracle 12.1.0.2.0 Enterprise edition):

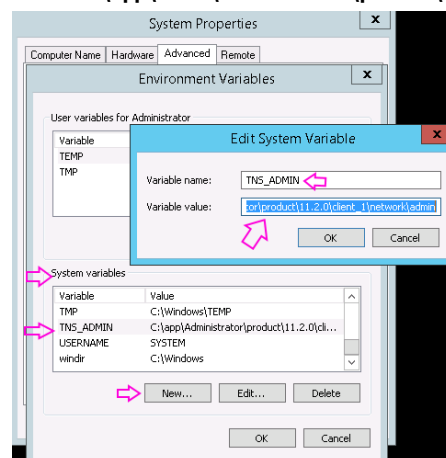
- **Firstly**, download the latest patchset version of the Oracle 12C release 1 **64-bit** client. At the time of writing:
 - The latest version is 12.1.0.2.0
 - This is currently available from here: <http://www.oracle.com/technetwork/database/enterprise-edition/downloads/database12c-win64-download-2297732.html>
 - Specifically, you need to download "**winx64_12102_client.zip**".
- Extract this file ("**winx64_12102_client.zip**") onto the Controller application server, and run '**setup.exe**'
- **VITAL**: During the client installation wizard, select a full '**Administrator**' install option:



- Typically choose all the default options for the other wizard choices.

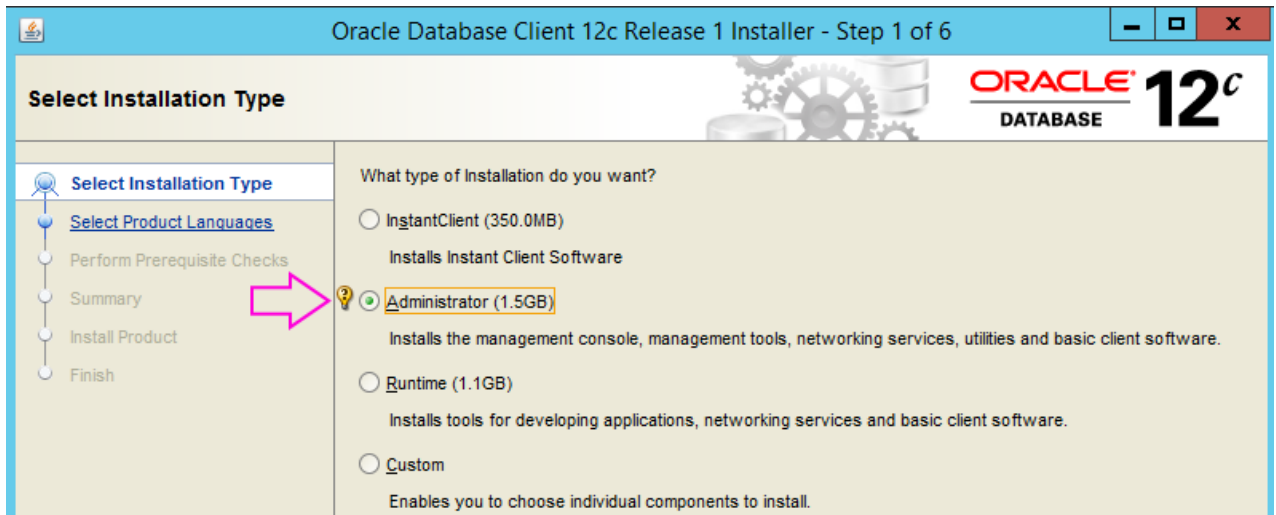
TIP: After the install has finished, check that it has installed all the expected components, by looking at the size of the "C:\app" folder (or wherever you have installed it to). The total size should be approximately **1.41Gb**.

- Now create/edit your **TNSNAMES.ORA** file.
 - By default, this is located here: C:\app\client\Administrator\product\12.1.0\client_1\network\admin
 - Ensure that it contains entries on how to connect to your Oracle database server(s)
- Next you need to create a '**System Variable**' (on your Controller application server) called '**TNS_ADMIN**' to point to the location of your TNSNAMES.ORA file.
 - By default, the value would be: **C:\app\client\Administrator\product\12.1.0\client_1\network\admin**



TIP: Before continuing, due to a bug in Oracle (<https://community.oracle.com/thread/3653584>) you will probably need to rename the registry key "HKLM\Software\Oracle" to "HKLM\Software\Oracle.OLD".

- **Secondly**, download the latest patchset version of the Oracle 12C release 1 **32-bit** client. At the time of writing:
 - The latest version is 12.1.0.2.0
 - This is currently available from here: <http://www.oracle.com/technetwork/database/enterprise-edition/downloads/database12c-win64-download-2297732.html>
 - Specifically, you need to download "**winnt_12102_client32.zip**".
- Extract this file ("**winnt_12102_client32.zip**") onto the Controller application server, and run '**setup.exe**'
- **VITAL**: During the client installation wizard, select a full '**Administrator**' install option:



- The author recommends that you install this software to a SEPARATE folder (from the 64-bit client)
 - For example, install it into the folder: C:\app_32\Administrator
- After the install has finished, check that it has installed all the expected components, by looking at the size of the "C:\app_32" folder (or wherever you have installed it to). The total size should be approximately **1.41Gb**.

IMPORTANT: Finally, undo the registry key renaming that you did earlier.

- **In other words, rename the registry key "HKLM\Software\Oracle.OLD" to "HKLM\Software\Oracle".**

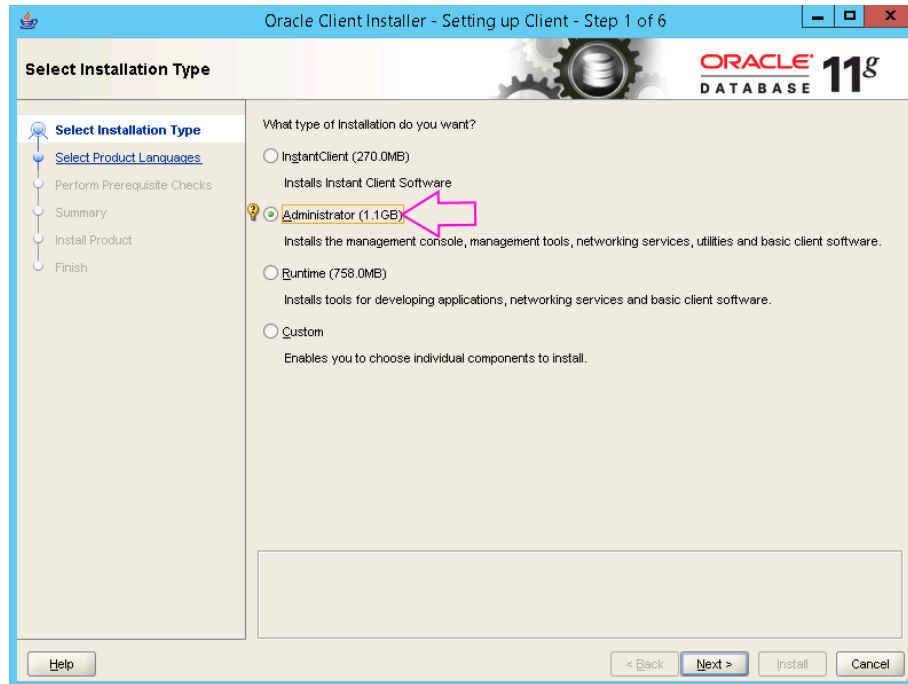
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If using **Oracle 11g** as your database server:

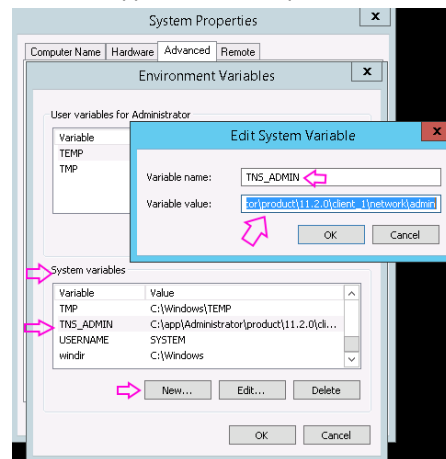
- Download the latest patchset version of the Oracle 11G **release 2** (rel2) **64-bit** client. At the time of writing:
  - The latest version is 11.2.0.4 (Oracle patch 13390677)
  - This is available from here: [https://updates.oracle.com/ARULink/PatchDetails/process\\_form?patch\\_num=13390677](https://updates.oracle.com/ARULink/PatchDetails/process_form?patch_num=13390677)
  - Specifically, you need to select '**Microsoft Windows x64 (64-bit)**'. Then download the file "p13390677\_112040\_MSWIN-x86-64\_4of7.zip".

**NOTE:** We have deliberately **not** chosen to download the original version (11.2.0.1) of the client (which is the file "win64\_11gR2\_client.zip") because there are known Oracle bugs in this version.

- Extract this file (p13390677\_112040\_MSWIN-x86-64\_4of7.zip) onto the Controller application server, and run '**setup.exe**'
- **VITAL**: During the client installation wizard, select a full '**Administrator**' install option:



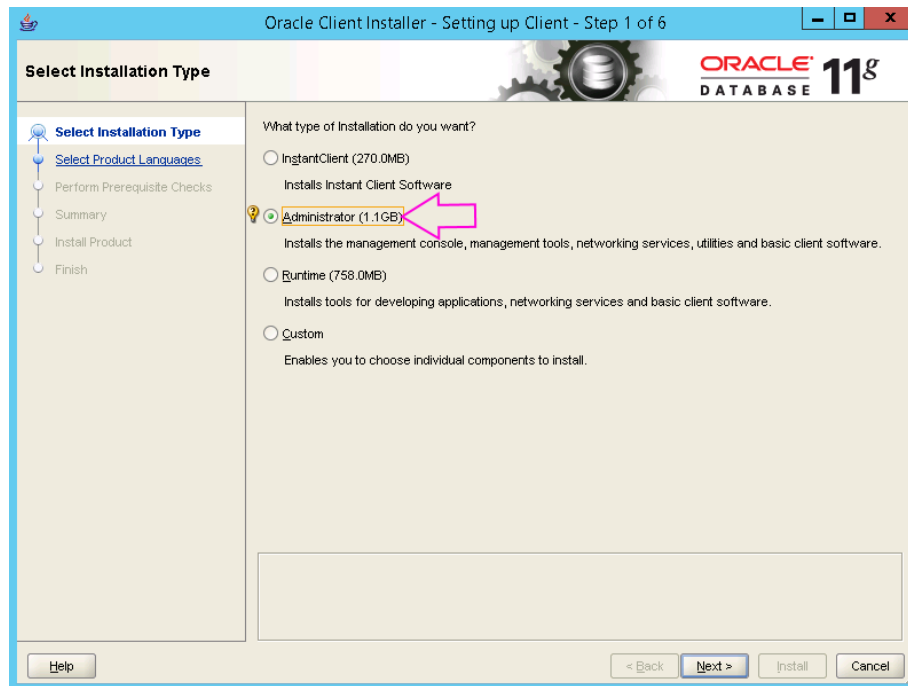
- TIP: After the install has finished, check that it has installed all the expected components, by looking at the size of the "C:\app" folder (or wherever you have installed it to). The total size should be approximately **1.05Gb**.
- Now create/edit your **TNSNAMES.ORA** file.
  - By default, this is located here: C:\app\Administrator\product\11.2.0\client\_1\network\admin
  - Ensure that it contains entries on how to connect to your Oracle database server(s)
- Next you need to create a '**System Variable**' (on your Controller application server) called '**TNS\_ADMIN**' to point to the location of your TNSNAMES.ORA file.
  - By default, the value would be: C:\app\Administrator\product\11.2.0\client\_1\network\admin



- Download the latest patchset version of the Oracle 11G **release 2** (rel2) **32-bit** client. At the time of writing:
  - The latest version is 11.2.0.4 (Oracle patch 13390677)
  - This is available from here: [https://updates.oracle.com/ARULink/PatchDetails/process\\_form?patch\\_num=13390677](https://updates.oracle.com/ARULink/PatchDetails/process_form?patch_num=13390677)
  - Specifically, you need to select '**Microsoft Windows (32-bit)**'. Then download the file "p13390677\_112040\_WINNT\_3of6.zip".

**NOTE:** We have deliberately **not** chosen to download the original version (11.2.0.1) of the client (which is the file "win32\_11gR2\_client.zip") because there are known Oracle bugs in this version.

- Extract this file (p13390677\_112040\_WINNT\_3of6.zip) onto the Controller application server, and run '**setup.exe**'
- **VITAL:** During the client installation wizard, select a full '**Administrator**' install option:



- The author recommends that you install this software to a SEPARATE folder (from the 64-bit client)
  - For example, install it into the folder: C:\app\_32\Administrator
- After the install has finished, check that it has installed all the expected components, by looking at the size of the "C:\app\_32" folder (or wherever you have installed it to). The total size should be approximately **1.05Gb**.

**OPTION #3 – DB2**

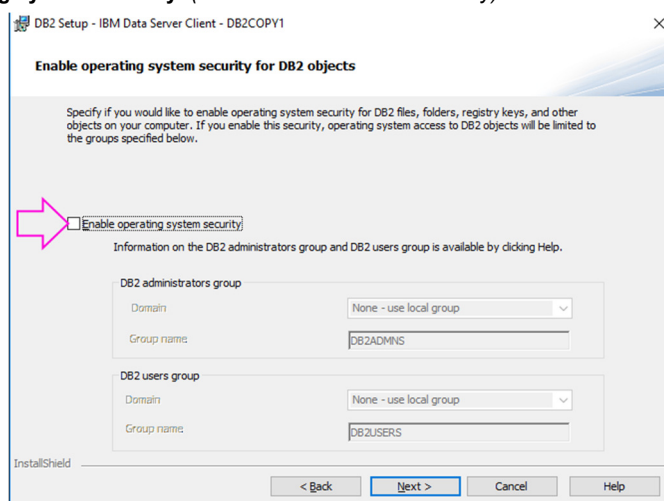
If using **DB2 11.1** as your database server:

Controller 10.3 comes bundled with a 'restricted license' version of IBM DB2 ("DB2 Workgroup Server Edition Server Virtual Server V11.1").

- Therefore, you can download the relevant DB2 installation files from the same location that you downloaded the Controller 10.3 media.  
[Alternatively, if you have a separate license for DB2 server, you can choose to obtain the DB2 software from elsewhere].

Assuming that you want to use the 'bundled' version of DB2, first install DB2 11.1:

- Open the folder for 'CNB89ML' (containing the extracted files for 'DB2\_WSE\_vs\_Svr\_11.1\_win\_86-64.zip').
- Extract the ZIP file to a folder
- Double-click on <location>\setup.exe
- Click "Install a Product"
- Underneath "IBM Data Server Client Version 11.1" click "Install New"
- In the Wizard, choose 'I Agree' then click "Next"
- Choose install type "Custom" then click "Next"
- Choose the default ("Install IBM Data Server Client on this computer and save my settings in a response file") and click "Next"
- Accept the default installation folder (or choose a new directory) as required, and choose "Next"
- Ensure that "English" is selected and click "Next"
- Inside the "DB2 copy name" accept the default ("DB2COPY1") then click "Next"
- Click "Next"
- Accept all the defaults \*except\* inside the "Enable operating system security for DB2 objects" **untick** the option "Enable operating system security" (see Technote 1504470 for why):



- Click "Finish"
- Click "Next", then "Finish"
- Close the final DB2 screen.

Next, choose which DB2 Fix Pack (patch) to upgrade to.

- At the time of writing, there is no DB2 11.1 Fix Pack available.

~~~~~

If using **DB2 10.5** as your database server:

First install DB2 10.5 RTM:

- Open the folder for 'CIWN9ML' (containing the extracted files for 'DB2_10.5.0.3_limited_Win_x86-64.exe').
- Double-click on <location>**setup.exe**
- Click "Install a Product"
- Underneath "**IBM Data Server Client Version 10.5**" click "Install New"
- In the Wizard, click "**Next**"
- Choose install type "**Custom**" then click "**Next**"
- Choose the default ("Install IBM Data Server Client on this computer and save my settings in a response file") and click "**Next**"
- Accept the default installation folder (or choose a new directory) as required, and choose "**Next**"
- Ensure that "**English**" is selected and click "**Next**"
- Inside the "DB2 copy name" accept the default ("**DB2COPY1**") then click "**Next**"
- Click "**Next**"
- Accept all the defaults **except** inside the "**Enable operating system security for DB2 objects**" **untick** the option "**Enable operating system security**" (see *Technote 1504470* for why)
- Click "**Finish**"
- Click "**Next**", then "**Finish**"
- Close the final DB2 screen.

Next, choose which DB2 Fix Pack (patch) to upgrade to.

- FP3a is bundled with Controller, so you can easily download this from the same location as before
- However, at the time of writing, FP5 is the latest version.
 - Therefore, **FP5 is recommended by the author.**
 - All DB2 client versions can be freely downloaded from here: <http://www-01.ibm.com/support/docview.wss?uid=swg27016878>

Finally, patch the DB2 10.5 client to that chosen Fix Pack:

- Open the patch folder
 - For FP3a, this is the folder: 'CN2XMML'
 - For FP5, this is the folder that you have extracted "v10.5fp5_ntx64_universal_fixpack.exe" to.
- Stop all DB2-related **Windows services**
- Double-click on <location>**setup.exe**
- Click "Install a Product"
- Inside the "**IBM Data Server Client Version 10.5 Fix Pack X**" section, click "**Work with Existing**":
- Choose all the default options, during the installation wizard.

~~~~~

### 3.9 Adobe Acrobat Reader

Strictly speaking, you do not need to install Adobe Acrobat Reader on your application server. However, to make testing easier, the author recommends that you install a modern/recent version (e.g. latest version of Adobe XI).

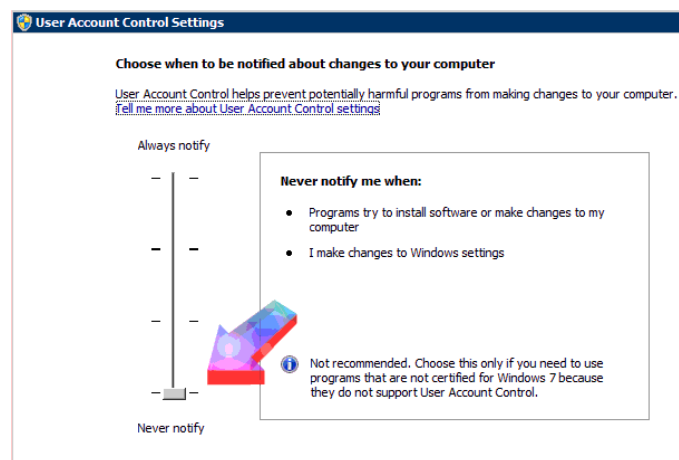
### 3.10 Other Miscellaneous Windows settings

- Ensure that all servers (e.g. SQL, Application#1, APP#2, Citrix #1, Citrix#2) are members of the **same domain**
  - If they are not in the same Windows domain, then this will cause problems when using advanced functionality (for example MSAS Data Mart publishes, and also using Optimise2/ERO)

### 3.11 Windows UAC

Disabling UAC is **not strictly necessary** (either on the server or the client device). However, to make the installation much easier (fewer prompts during the software install/configuration) the author typically **disables** the Windows **UAC** prompts before continuing (you can re-enable UAC once everything is installed/working):

- Start - Settings - Control Panel
- Click "User Accounts- User Accounts"
- Click "Change User Account Control settings"
- Change slider setting to "**Never notify**"
- Click OK



### 3.12 Enable the Windows policy 'Do not forcefully unload the user registry at user logoff'.

**VITAL:** To stop various error messages (see Technote #1497069) you should:

- Launch the group policy editor (click "Start - Run" then type "**gpedit.msc**")
- Navigate "Computer Configuration -> Administrative Templates -> System-> **UserProfiles**"
- Double-click on "**Do not forcefully unload the user registry at user logoff**"
- Change the setting from "Not Configured" to "**Enabled**".

### 3.13 Best practices before proceeding

The author recommends:

- Enable 'Terminal Services' (remote connection) on all the servers (for ease of remote administration of them in the future)
- Ensure that your application server has a fast (a *minimum* of 100Mb Full Duplex) network connection to/from the database server
  - **Ideally you should be using [gigabit](#) network connections**

**IMPORTANT TIP:** Try testing the network connection (between the application servers and the database server).

For guidance on this, see here: <http://www-01.ibm.com/support/docview.wss?uid=swg21347841>

- Double-check the Regional settings, before installing any software.
  - Typically, ensure that your server has been installed with the appropriate setting for your country (e.g. English (UK)) as default regional options/language/keyboard.
  - These regional settings choices should be consistent (the same) between the various servers (Database, Application server and Citrix servers) involved
    - Having a mixture of Regional Settings increases the likelihood of experiencing application issues

## 4 Recommended Server System Settings

---

### 4.1 Create a Controller System Windows domain user

Some Controller system components (mainly, "ERO / Optimise2") run best under a Domain User account, so now:

- Create a Windows (Active Directory) domain user (e.g. DOMAIN\Controller\_system)
  - Ensure that the user's password is **not** set to expire
- Add this Domain User to the local "administrators" group that resides on the application server
  - i.e. right-click on "My Computer", and choose "Manage"
  - Expand "Local Users and Groups - Groups"
  - Open up "Administrators" and add the domain user here
- Ensure that the customer does not have a policy (e.g. an AD Group Policy) which periodically automatically removes non-recognised accounts from the local "Administrators" group

#### Best Practice

Add this Controller 'service' Windows user to the local "administrators" group for *\*all\** servers that are dedicated for Controller-only use (for example, you may have dedicated SQL/Citrix servers)  
This is best practice makes the installation (and future troubleshooting work) easier.

#### Important CHANGE in procedure from earlier versions of this document:

The author's previous best practice was that all future parts of this document should be performed **whilst logged on as the Controller "system" Windows user account** (for example "DOMAIN\Controller\_system") that you have previously created (see above).

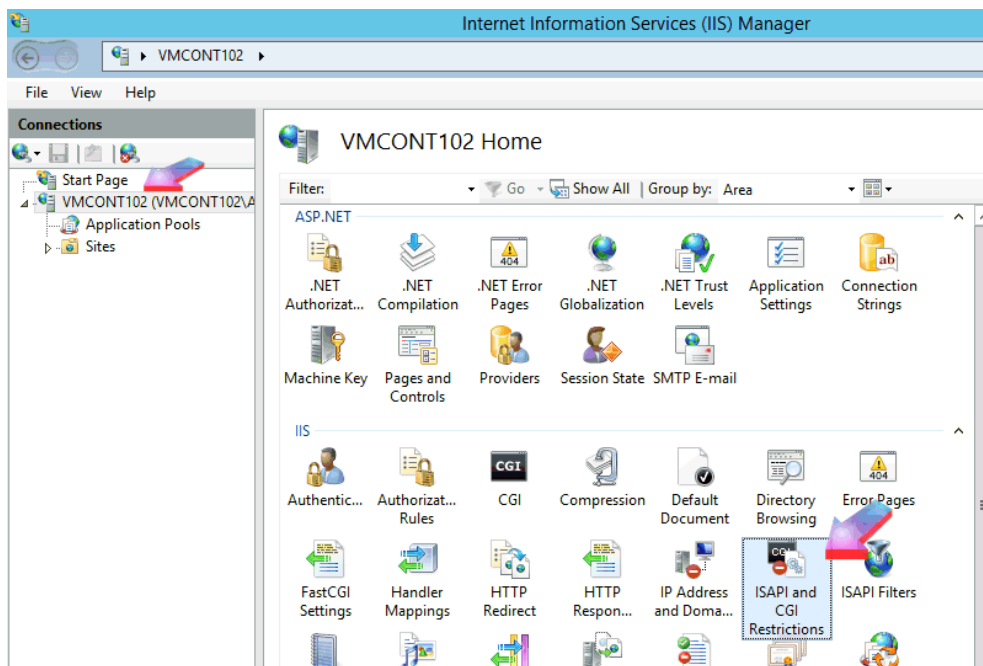
However, **when using modern versions of Windows (for example 2012 onwards)** there are many tasks that are 'locked down' to user accounts who are not the 'Administrator' account. Therefore, the author currently recommends that (if possible) to make the tasks easier the following tasks are performed when logged on as the local '**Administrator**' account.

## 4.2 Allow Cognos CGI/ISAPI extensions

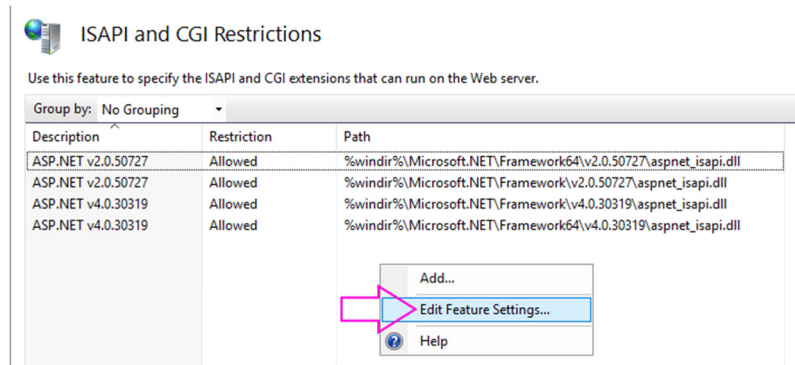
The Cognos 10 BI server engine (which is bundled with Controller) can either use CGI or ISAPI (see later section for more details). By default, these are both disabled. After you have chosen which one to use (default = CGI) you must enable the relevant extension by using either of the following methods ('quick' or 'slow'):

### QUICK AND EASY METHOD:

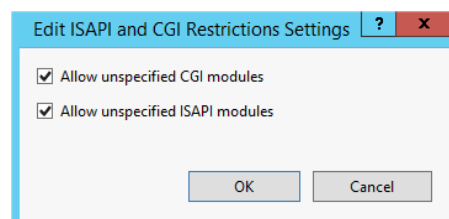
- Open the IIS administrative Manager tool, highlight your server, and open '**ISAPI and CGI Restrictions**'



- Right-click on the white background, and choose 'Edit Feature Settings'



- Tick the relevant box (either "Allow unspecified **CGI** modules" or "Allow unspecified **ISAPI** modules") depending on which technology you intend to use.
  - If unsure, simply tick both:



- Click OK.

#### SLOWER/MORE PRECISE METHOD:

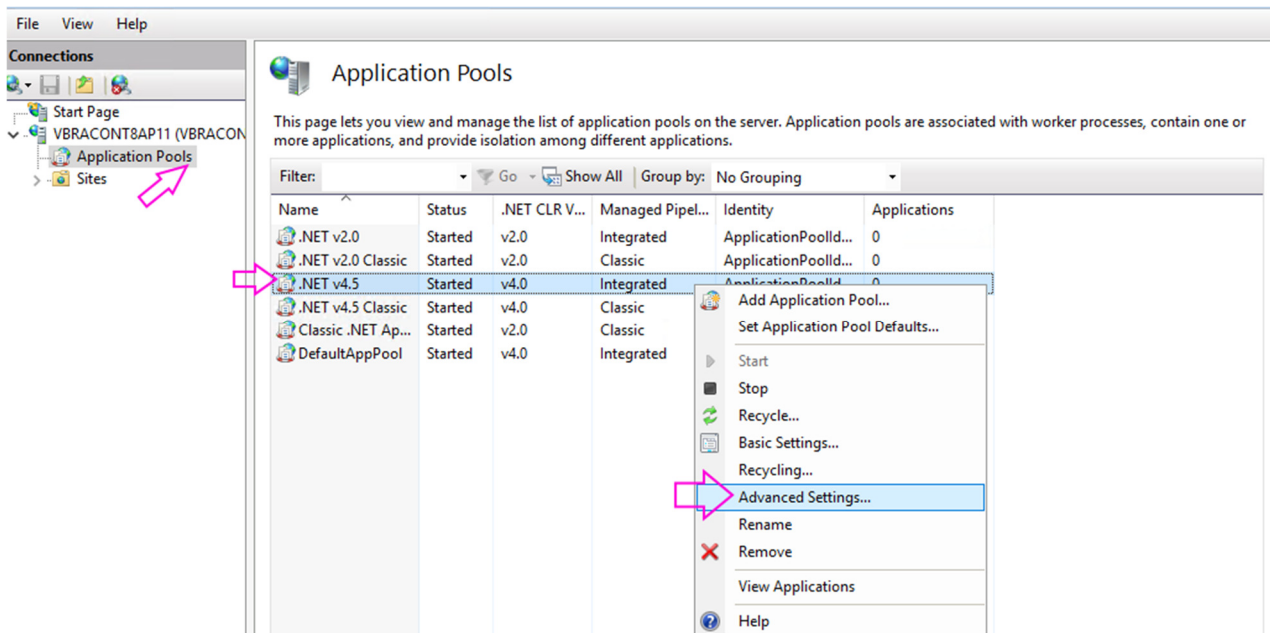
If you need to have more precise security control, you could instead:

- Right-click on the white background, and choose 'Add'
- Inside the "Add ISAPI or CGI Restriction" box, create a new Webserver extension
- For example, call the 'Description' either '**Cognos.cgi**' or '**cognosisapi.dll**' (depending on your needs)
- Inside the 'ISAPI or CGI path' configure it to allow the relevant file, which (by default) is either:
  - C:\Program Files\ibm\cognos\ccr\_64\cognos.cgi
  - Or C:\Program Files\ibm\cognos\ccr\_64\cgi-bin\cognosisapi.dll
- Make sure that "Allow extension path to execute" is ticked

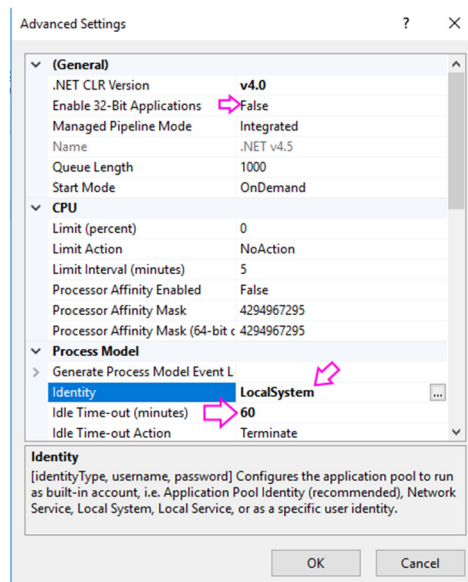
### 4.3 Optimise IIS website 'Application Pool' settings

Inside IIS Manager, open the section 'Application Pools'

- Right-click on **'.NET v4.5'** (make sure you choose the **'Integrated'** version) and choose 'Advanced Settings'

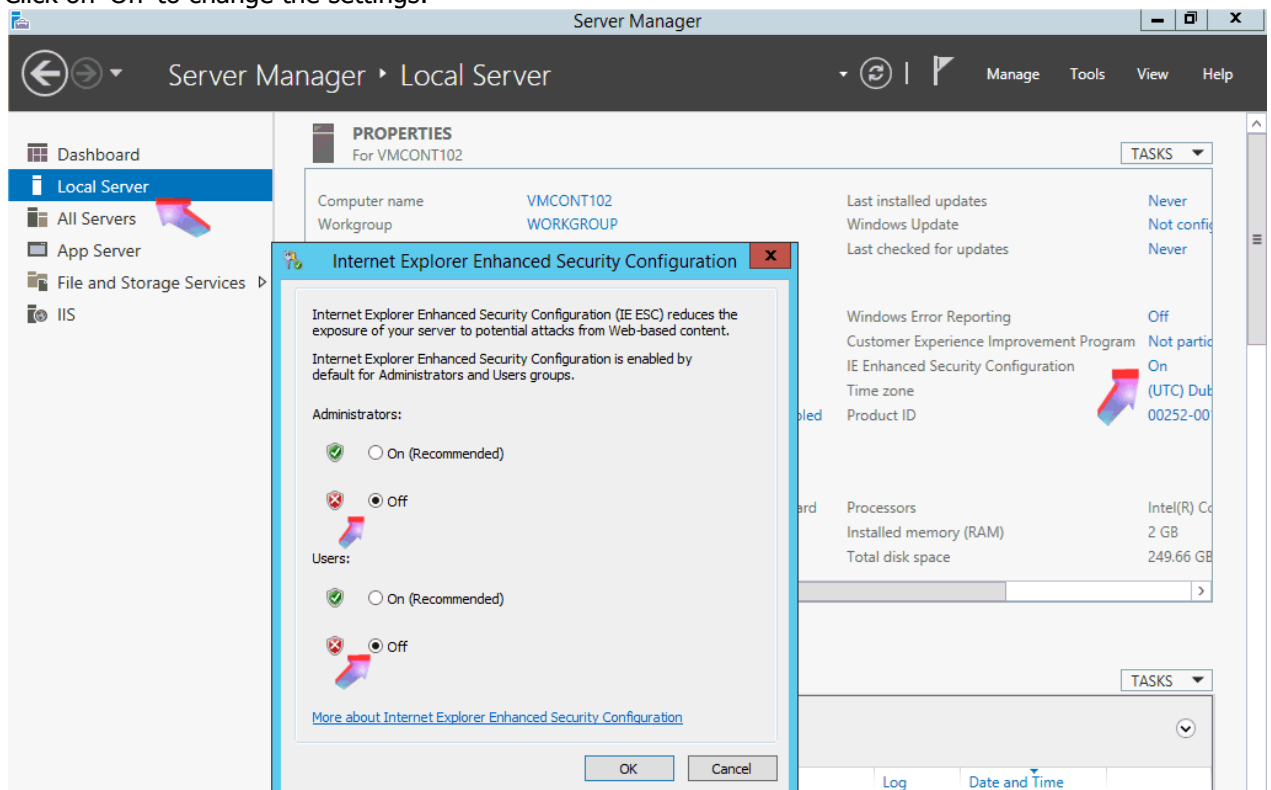


- Make sure that "Enable 32-bit Applications" is set to **"False"**
- Under 'Process Model', change the setting for '**Idle Time-out (minutes)**' from the default (20) to **600**
  - TIP: This is longer than previous document's recommendations (60). This is due to intermittent problems that can sometimes appear in some environments.
- Also, modify the setting "Identity" to be **"LocalSystem"**:



#### 4.4 Disable Internet Explorer Enhanced Security Configuration

- Right-click on 'My Computer' and choose 'Manage'
- Highlight "**Local Server**" (at the top of the screen), and then locate the setting 'IE Enhanced Security Configuration'
- Click on 'On' to change the settings:

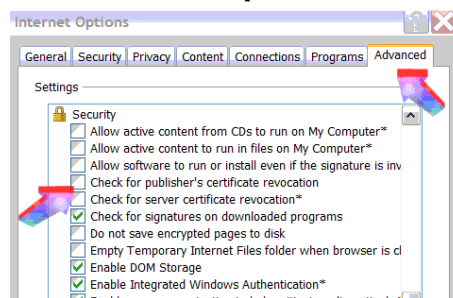


- Ensure that 'Internet Explorer Enhanced Security Configuration' is configured to be '**Off**' for **both Administrators and Users**.

#### 4.5 Disable Internet Explorer's publisher certificate revocation checking

If your application server cannot connect to the internet, then you will receive large delays when you attempt to run the Controller .NET software. To solve this, launch Internet Explorer, and click 'Tools – Options'.

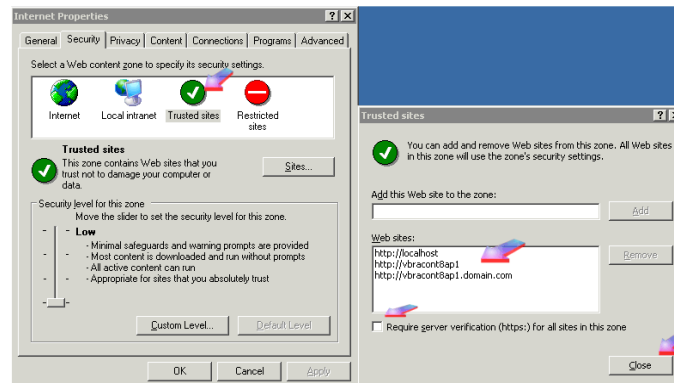
- Click 'Advanced' tab' and UNTICK "**Check for publisher's certificate revocation**":



#### 4.6 Add servers to Trusted Sites zone in IE

**Important:** It is VITAL to ensure that communication between the application servers is not blocked by Internet Explorer. Therefore, you MUST perform the following steps:

- Launch Internet Explorer, and click 'Tools – Options'
- Click 'Security', select 'Trusted sites' and click 'sites' button:



- Untick the box 'Require server verification...' and add all the addresses for all the separate Controller servers (e.g. report server, gateway etc.) in here

**TIP:** In case you need it later, it is recommended you add both the NetBIOS and FQDN names:

In other words, if you have 3 Controller application servers, add the following:

- <http://controllerAPP/> , <http://controllerapp.domain.com/>
- <http://controllerREP/> , <http://controllerREP.domain.com/>
- <http://controllerGWY/> , <http://controllerGWY.domain.com/>

Finally (see IBM Technote #1347295) you must:

- Open the Internet Options, Security tab
- Change the security level for the "Trusted sites" from the default "Medium" to "**Medium-Low**"

## 5 Database Preparation

**TIP:** The following section assumes you are using Microsoft SQL. If you are using a different database platform, please refer to the author's companion documentation:

- Oracle: <http://www-01.ibm.com/support/docview.wss?uid=swg21346962>
- DB2: "Installing & Configuring IBM DB2 10.5 for use with Cognos Controller 10.2 - Support Proven Practice" plus the following guidance:
  - ContentStore: <http://www-01.ibm.com/support/docview.wss?uid=swg21667225>
  - Main Database: <http://www-01.ibm.com/support/docview.wss?uid=swg21570572>

### 5.1 Default Collation Setting for SQL server

**Important:** It is vital that you read and understand this section. Using the 'wrong' database collation for the Controller application repository database will cause problems in the future.

Controller should work with **almost** any case-insensitive server collation setting. NOTE: **We do not recommend using "uppercase preference"** (for example SQL\_Latin1\_General\_Pref\_CP1\_CI\_AS) because:

- no testing has been performed with "uppercase preference" collation settings
- we believe that it can *potentially cause errors with alphanumeric keys*. Since alphanumeric keys are used extensively in Controller, I would take this as a strong warning not to use it.

However, you cannot transfer a database from one SQL server (to a different SQL server) if the 2 servers have *different* server default collation settings.

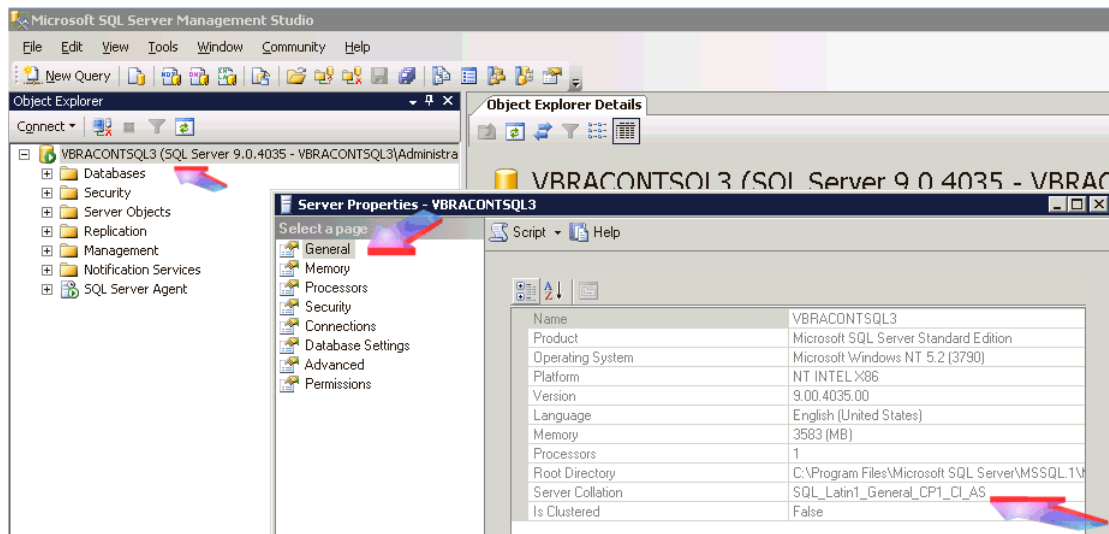
- This is because the Controller database *\*must\** match the collation setting of the TEMPDB database, so that it can transfer information correctly. For more information, see IBM Technotes #1345692 & 1347234.

Since the customer will want to transfer their database between customer ⇔ Cognos Support and ⇔ IBM Cognos consultant, it is *essential* that they are aware that **each SQL server** (that they transfer the database to/from) **must have the same collation setting for its TEMPDB database** (also known as having the same 'default' collation setting).

Therefore (if at all possible) you should **try your best** to ensure that your SQL server has the IBM Cognos 'preferred' (most tested/used) collation settings of:

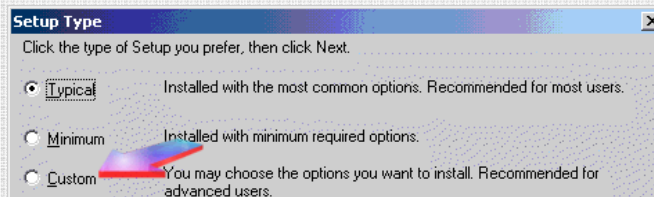
- either: **Latin1\_General\_CI\_AS**
- or: **SQL\_Latin1\_General\_CP1\_CI\_AS**

TIP: You can check what your SQL server's default collation setting is, by using the 'SQL Server Management Studio' tool. Right-click on server, and click "properties" – see below for an example:

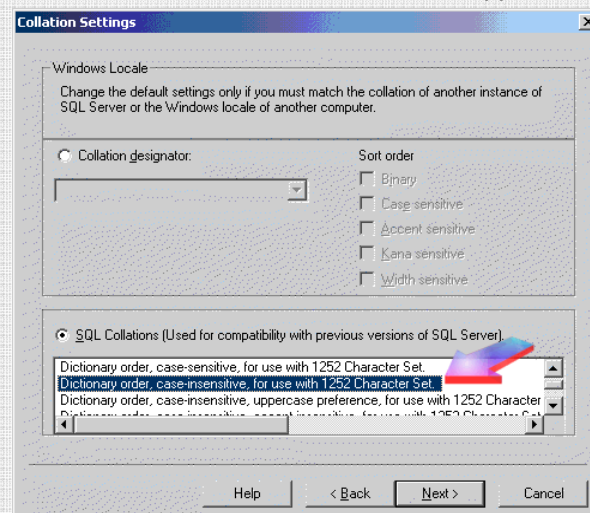


TIP: If you yourself are installing the Microsoft SQL server, then you may decide that you want to use IBM Cognos' customer's most popular collation ("SQL\_Latin1\_General\_CP1\_CI\_AS").

To achieve this, you need to ensure that you choose a "custom" install. During the installation wizard, you choose a 'custom' installation of SQL (see below for an example for SQL 2000)



During the wizard, when you reach the "collation settings" screen, choose "dictionary order, case-insensitive, for use with 1252 Character Set", which will appear similar to the following:



## 5.2 Upgrade SQL Server to latest Service Pack

Naturally, after installing SQL Server it is standard best practice to immediately patch it to the latest Microsoft service packs.

At the time of writing, the author recommends:

- **SQL 2008:**
  - **R1** - Install **SP3** by downloading and running the relevant file (*for example "SQLServer2008SP3-KB2546951-x86-ENU.exe" for 32-bit version*).
  - **R2** - Install **SP3** by downloading and running the relevant file (*for example "SQLServer2008R2SP3-KB2979597-x64-ENU.exe" for 64-bit version*).
- **SQL 2012:**
  - Install **SP2** by downloading and running the relevant file (*for example "SQLServer2012SP2-KB2958429-x64-ENU.exe" for 64-bit version*).
- **SQL 2014:**
  - Install **SP2** by downloading and running the relevant file (*for example "SQLServer2014SP2-KB3171021-x64-ENU.exe"*).
- **SQL 2016:**
  - Install **SP1** by downloading and running the relevant file (*for example "SQLServer2016SP1-KB3182545-x64-ENU.exe" for 64-bit version*).

## 5.3 Post-install SQL Server Optimisations

### Maximum server memory (in MB)



**Important:** – For performance reasons, it has been found that it is best to re-configure your SQL server to **NOT** use all the server's RAM.

- Instead, modify the SQL memory setting "**Maximum server memory (in MB)**" to be less than (for example 75%) the total of RAM in the server.
  - For example, in a **16Gb** RAM server, it is suggested to change the value to **12288** (which equates to **12Gb**).
- *For more details, see Technote #1498586.*

### SQL Server parallelism

Relatively recently, the author has noticed that some customers can **greatly** benefit from changing their SQL "**Max Degree of Parallelism**" setting (see Technotes 1595955, 1590091, 1347497 & 1634615 for example).

There is a balance to be had between speeding up consolidations and stopping the system getting overloaded by large/complex processes. As a general guide, the author recommends:

- For **underpowered** (below recommended specifications) SQL servers with only **2 or 3 CPUs** (CPU cores) - change the value to **1**
- For SQL servers with **4 to 7 CPUs** - change the value to **2 or 3**
- For SQL servers with **8 to 12 CPUs** - change the value to **3 or 4**
- For SQL servers with **12 to 16 CPUs** - change the value to **4 or 5 or 6**.

### General Performance Tips:

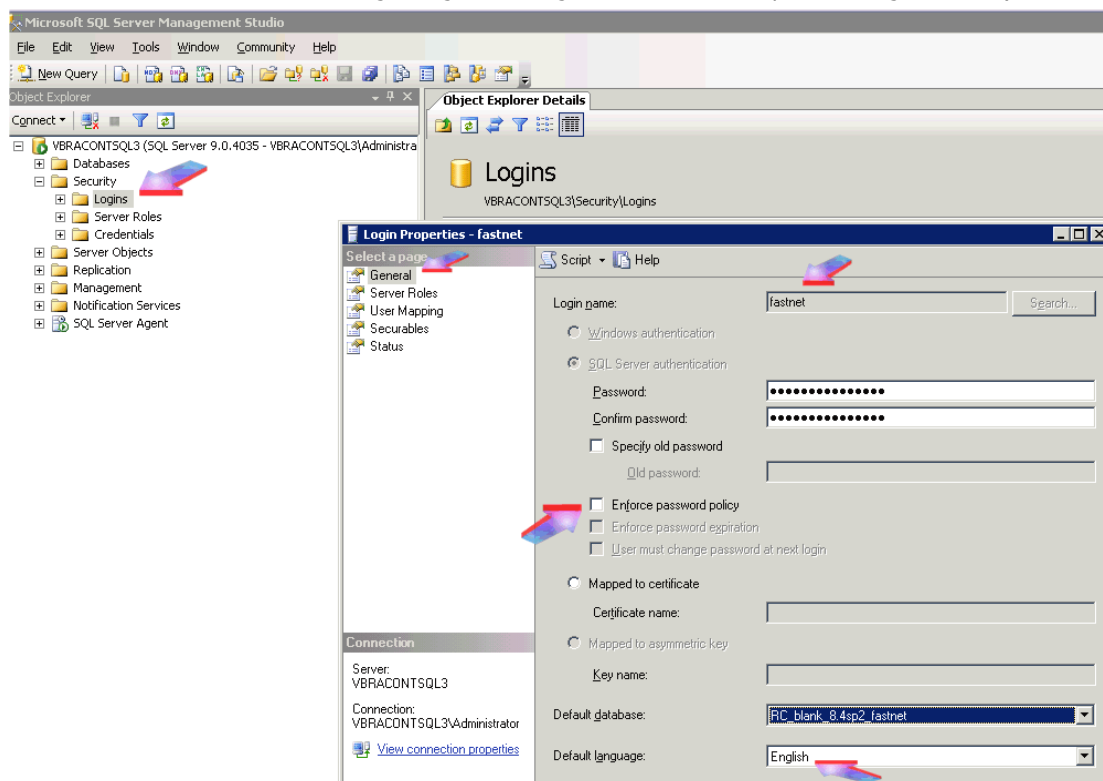
Finally, there are several general ways to improve SQL performance, including:

- Ensure that system/TEMPDB, DATA and LOGS are on separate arrays, for maximum performance
- Change the default storage location for the DATA/LOG files on the SQL server at this point, to save time in the future.
- Ideally, the SQL server should be running on a server dedicated to this task only. However, if it is performing another role (e.g. it is a development/test Controller Application server) then modify the SQL Server's memory settings so that it does not use all the available RAM.

## 5.4 Controller SQL login user and database creation

**TIP:** If you require *exact* step-by-step instructions, then follow the author's separate document inside here: <http://www-01.ibm.com/support/docview.wss?uid=swg21594174>

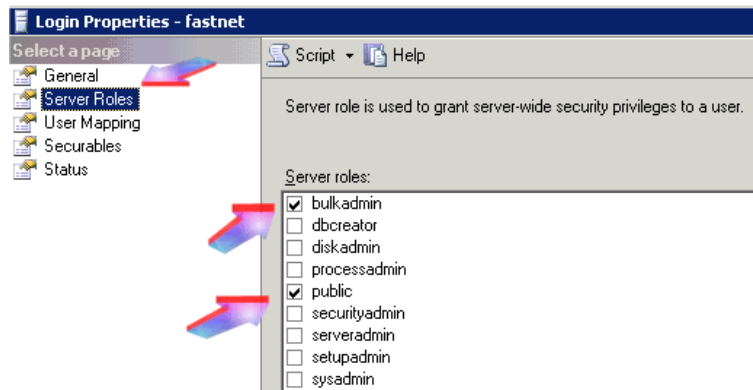
- **Create blank SQL database(s)** for Controller "application" repository (i.e. financial data)
  - Most customers have a need for 'live', 'test' and 'training' databases
  - Best practice: call these ControllerLIVE, ControllerTEST and ControllerTRAIN respectively
- **Create blank SQL database** for Controller "Cognos BI ContentStore" (i.e. report server configuration data)
  - Best practice: call this ControllerContentStore
- **Create SQL login**
  - To enable SQL logins, you must ensure that your SQL server is set to 'mixed-mode' authentication
  - By convention, Cognos recommends using the SQL login called "fastnet", although any name could be used (although cannot start with a number e.g. "1cognos" since get errors with certain processes e.g. DBMAINT).



### Important:

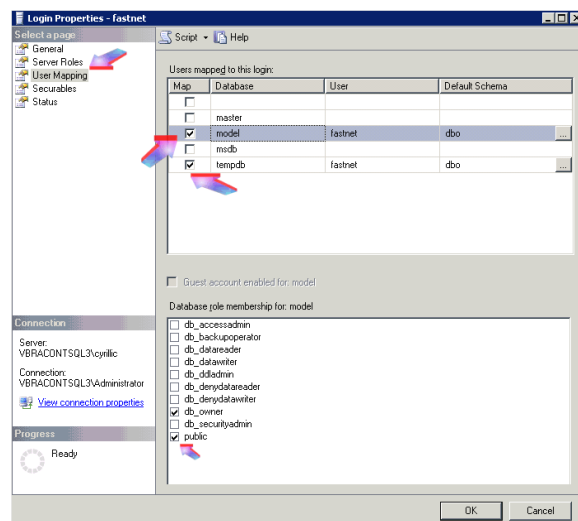
- The password for "fastnet" cannot contain any '&' characters.
- For most situations, do **NOT** tick the 'Enforce password policy' checkbox
- Also, ensure that this SQL login (e.g. "fastnet") has its "default language" set to "English". Otherwise you may get strange issues, such as standard reports having incorrect decimal characters.

- Give SQL login database access rights
  - Click on "server roles" and ensure that **ONLY** the roles "public" and "bulkadmin" (known in previous versions of SQL as "bulk-insert administrators") are ticked
    - For your information, the 'bulkadmin' is required for "Optimise2" (ERO) to work



**VITAL:** Do *\*not\** give the SQL login (e.g. 'fastnet') 'sysadmin' rights. See Technotes such as #1347546 for why not.

- Ensure that 'fastnet' is given "dbowner" rights to the following databases:
  1. **tempdb** – *required since Controller extensively uses this database*
  2. **model** – *required since SQL will occasionally recreate tempdb from a copy of 'model', e.g. whenever SQL is restarted*
  3. all Controller application databases (for example **ControllerLIVE**, **ControllerTEST**, **ControllerTRAIN** etc.)



**Information:** The SQL login 'fastnet' requires 'dbowner' rights to the database **tempdb** to allow the ERO ("Enhanced Report Optimisation" – also known as "Optimise2") feature to work.

*By default SQL will allow the user "fastnet" read /write access to TEMPDB (regardless of whether we use Optimise2 or not). However, the reason why the Controller SQL login specifically needs dbowner rights is because of a confirmed Microsoft limitation of their SQL product, where 'BULK INSERT' (which is the technique behind Optimise2), requires dbowner rights.*

*NOTE: The fact that fastnet is 'dbowner' for TEMPDB should not affect other applications. Using Optimise2 should, in fact, affect other applications using the same SQL Server to a lesser extent than if Optimise2 wasn't 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).*

## 5.5 Create an Optimise2 (a.k.a. "Advanced Excel Link" or "E.R.O." – Enhanced Reporting Optimisation) share

In most circumstances, it is easiest to place this share on the SQL server:

- Create a folder on the SQL server (e.g. called "controller\_BI\_share") and share it (e.g. "controller\_BI\_share\$")
- Modify the share and NTFS permissions of it so that the Controller service account user (for example domain\controller\_system) has full control rights
- Create a subfolder for each of the databases
  - For example 'ControllerLIVE', 'ControllerTEST', 'ControllerTRAINING'
- For more information, see Technote # 1347048.

## 5.6 Restore other databases (if necessary)

You may already have a Controller database to restore (e.g. sent from the application consultant). Use the SQL Enterprise Manager interface to restore the database. After restoration, you will have to remove orphaned users ('synchronise SQL logins') by:

- launch Query Analyser
- change database to one you have just restored
- run the following script (update\_user.SQL):

```
EXECUTE sp_change_users_login 'Update_One', 'fastnet', 'fastnet'
GO
```

TIP: change \*both\* the users 'fastnet' and 'fastnet' for the name of your SQL login (e.g. 'cognos' or whatever).

## 5.7 Create Database Maintenance Plans

**Important:** It is VITAL that, for performance and stability reasons, your SQL server has a Database Maintenance plan configured. See Technote 1347569 for more information.

### SQL:

The author's best practices are:

- Create a database maintenance plan (e.g. called "Controller databases") which:
  - Optimises/re-indexes/update\_statistics once a week (e.g. every Sunday morning at 4am)
  - Backs up the database nightly
  - Backs up the transaction logs nightly
- In addition, it is HIGHLY recommended that:
  - You configure an \*additional\* new maintenance job, which merely "update the statistics" every night
    - This will speed up certain operations inside Controller

See here for full details: <http://www-01.ibm.com/support/docview.wss?uid=swg21396973>

**Oracle:** There are recommended scripts inside the official documentation, however for more details see the author's separate Proven Practice document "Guide to installing Oracle 11G rel2 Server \_and creating databases\_ on Windows, for Controller 8.5.1".

- TIP: For more best-practice hints & tips, see Technote# 1346962.

**DB2:** The author's best practices are explained here: <http://www.ibm.com/support/docview.wss?uid=swg21981728>

## 6 Installation of Controller Server

### 6.1 Download the Controller 10.3 RTM software from the IBM website

Instructions for how to download 10.3 are found here: <http://www-01.ibm.com/support/docview.wss?uid=swg24042874>

TIP: Typically, most customers will only need to download the following components:

- (1) 'Main' Controller server software
  - **CNH57ML** = Controller 10.3 Microsoft Windows Multilingual
- (2) TM1 Server
  - **CIYF7ML** = TM1 64-bit 10.2.2 Microsoft Windows Multilingual

**TIP:** In general, when using Controller FAP it is recommended to have a 'dedicated' (TM1 only) server running a 64-bit operating system, using the 64-bit version of TM1.

### 6.2 Download any preferred/recommended (post 10.3 RTM) Interim Fix Packs

At the time of writing, there are no interim fixes for 10.3

- **The author recommends downloading the latest patch** in order to benefit from the latest bug-fixes. Contact IBM Support for details on the latest patch version

### 6.3 Obtain a suitable JDBC driver

Some Controller functions use JDBC connectivity to access the Controller databases. Controller does not ship with a JDBC driver in the software itself, so you must download a suitable JDBC driver from the relevant database provider's website.

For example:

| Database Server | Description      | Filename                            |
|-----------------|------------------|-------------------------------------|
| Microsoft SQL   | JDBC driver      | sqljdbc4.jar                        |
| Oracle          | JDBC thin driver | varies*<br>(example:<br>ojdbc5.jar) |
| IBM DB2         | DB2 driver       | db2jcc.jar                          |

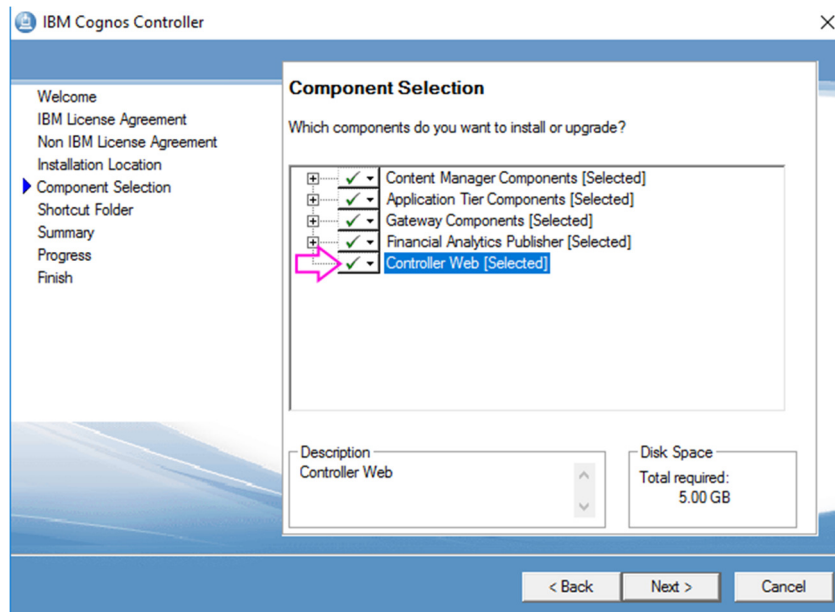
TIP:

- **sqljdbc4.jar**
  - see here: <http://www-01.ibm.com/support/docview.wss?uid=swg21500432>
- **Oracle OJDBC JAR file**
  - There are several different possible file names/versions (for example **ojdbc5.jar**). For full details, see: <http://www-01.ibm.com/support/docview.wss?uid=swg21988891>
- **db2jcc.jar**
  - Assuming you have installed the DB2 10.5 client in the default location, then you can find this (on the Controller application server) here: C:\Program Files\ibm\SQLLIB\java

## 6.4 Server Software installation

**TIP:** The following assumes that there is only 1 application server, with all components installed and running on this server.

- Launch the installation program **issetup.exe** (located inside <extracted\_path>\winx64h)
- Select the **installation** language and click the **Next** button
  - this is used only for the installation, it is not the default product language
- **I agree, Next**
- Choose the **installation location** (default C:\Program Files\ibm\cognos\ccr\_64), and click the **Next** button



- Tick/select **all components** and click the **Next** button
  - NOTE: '**Controller Web**' is only support on Microsoft SQL (not Oracle/DB2) for 10.3 RTM
  - From Controller 10.3 Fix Pack 1 onwards, DB2 is supported
- Accept the default shortcut folder (this is for the start menu) and click the **Next** button
- Click the **Next** button to start the install
- After the installation has completed, leave the option "Start Cognos Configuration" **deselected** and click the **Finish** button

## 6.5 Install/apply required Interim Fix / Fix Pack

At the time of writing, there are no Interim Fix packs for 10.3.

## 7 Configuration of Controller Server

### 7.1 Copy required JDBC drivers onto server

Copy the JDBC driver(s) (see earlier in this document for more details) into the 'Integration', 'Lib' and 'ccr\_64' folders.

TIP: By default, the folders are located here:

1. C:\Program Files\ibm\cognos\ccr\_64\server\Integration
2. C:\Program Files\ibm\cognos\ccr\_64\server\FAP\lib
3. C:\Program Files\ibm\cognos\ccr\_64

TIP: The JDBC driver filenames are:

- For **SQL**, the JDBC file is **sqljdbc4.jar**
- For **Oracle**, there are several different possible file names/versions (for example **ojdbc5.jar**). For full details, see <http://www-01.ibm.com/support/docview.wss?uid=swg21988891>
- For **DB2**, the JDBC file is **db2jcc.jar**

### 7.2 For Oracle Only - Configure 'ccr-system-properties.properties' file

If using Oracle, then you need to specify the location of the TNSNAMES.ORA file in the **ccr-system-properties.properties** file in the ...Server\integration folder.

For Oracle 11G, by default the location of the TNSNAMES.ORA file is usually the directory:

C:\app\Administrator\product\11.2.0\client\_1\network\admin

Therefore, in the case of a default Oracle 11G rel2 client install, you need to modify the file as follows:

```
# Oracle Network admin directory path, the location of the TNSNAMES.ORA file
oracle.net.tns_admin=C:\\app\\Administrator\\product\\11.2.0\\client_1\\network\\admin
```

Local Disk (C:) > Program Files > ibm > cognos > ccr\_64 > server > integration

| Name                       | Date modified    | Type            | Size     |
|----------------------------|------------------|-----------------|----------|
| antlr-3.2.jar              | 21/05/2014 20:26 | JAR File        | 875 KB   |
| ccr-common.jar             | 21/05/2014 20:26 | JAR File        | 3,911 KB |
| ccr-dbTypes                | 21/05/2014 20:26 | PROPERTIES File | 4 KB     |
| ccr-integration.jar        | 21/05/2014 20:26 | JAR File        | 38 KB    |
| ccr-integration-server.jar | 21/05/2014 20:26 | JAR File        | 45 KB    |
| ccr-system-properties      | 21/05/2014 20:26 | PROPERTIES File | 1 KB     |

ccr-system-properties - Notepad

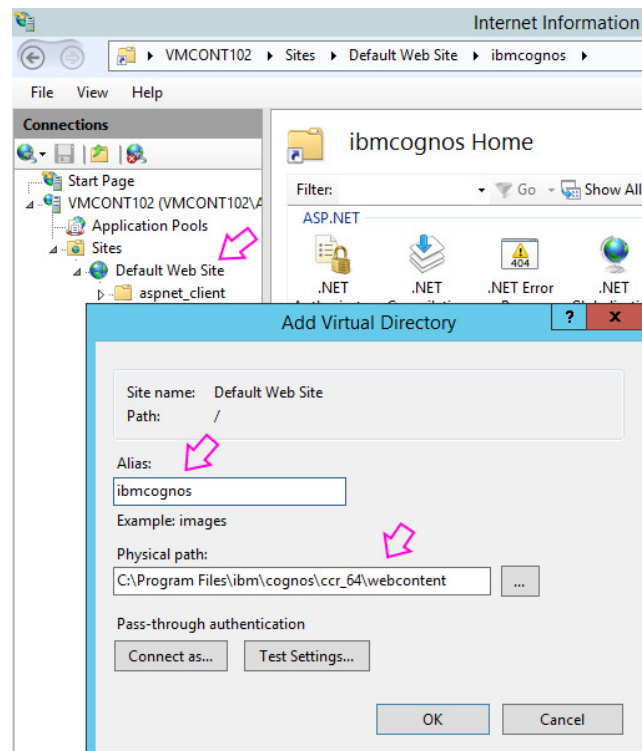
```
File Edit Format View Help
#
# BI and PM: ccr
#
# (C) Copyright IBM Corp. 2004, 2009. All Rights Reserved
#
# The source code for this program is not published or
# otherwise divested of its trade secrets, irrespective of
# what has been deposited with the U.S. Copyright Office.
# =====
# IBM SOURCE CODE HEADER END
# User defined System properties

# Oracle Network admin directory path, the location of the TNSNAMES.ORA file
# oracle.net.tns_admin=C:\\oracle\\product\\10.2.0\\client_1\\NETWORK\\ADMIN
oracle.net.tns_admin=C:\\app\\Administrator\\product\\11.2.0\\client_1\\network\\admin
```

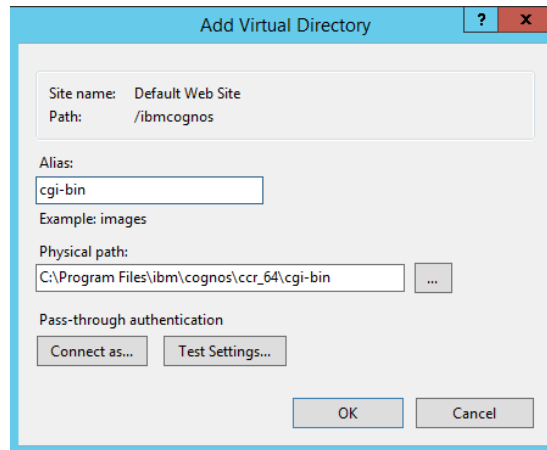
### 7.3 Cognos BI Report Server configuration

Note: These instructions assume that Microsoft SQL Server is the database type used.

- **Create the ContentStore** - *\*only\* if you have not already done so inside step 4.3 of this document!*
  - [Logon to the SQL Server as an administrator](#), and launch SQL Server Enterprise Manager
  - Expand Microsoft SQL Servers > SQL Server Group > Local > Databases
  - Right click on Databases and select the New Database... option from the popup menu
  - Enter the new database name (for example "ControllerContentStore")
  - Click OK
- **Add a user to the database**
  - Expand the ControllerContentStore database entry in the tree control in the left pane
  - Right click on the User entry, and select New Database User... entry from the popup menu
  - Choose <New> in the Login name: drop down
  - A new dialog will appear. Enter your SQL login name (for example "fastnet") in the Name edit field
  - Select SQL Server Authentication as the Authentication type
  - Enter a password
  - Set ControllerContentStore in the Database: drop down in the Defaults section, and Click OK
  - Confirm the password and click OK
  - Click Yes
  - Set fastnet in the Login name: drop down
  - Select **db\_owner** and **db\_ddladmin** in the Permit in Database Role, and Click OK
- **Add the Cognos BI 'runtime' virtual directories**
  - Add the **ibmcognos** virtual directory
    - Launch IIS Manager
    - In the tree control in the left pane expand (machine name) > Web Sites > **Default Web Site**
    - Right click the **default web site**
    - Choose '**Add Virtual Directory**'
    - Enter **ibmcognos** in the Alias
    - In the 'Physical path' browse to the (installdir)\webcontent path (for example C:\Program Files\ibm\cognos\ccr\_64\webcontent and click **Next**
    - Click OK

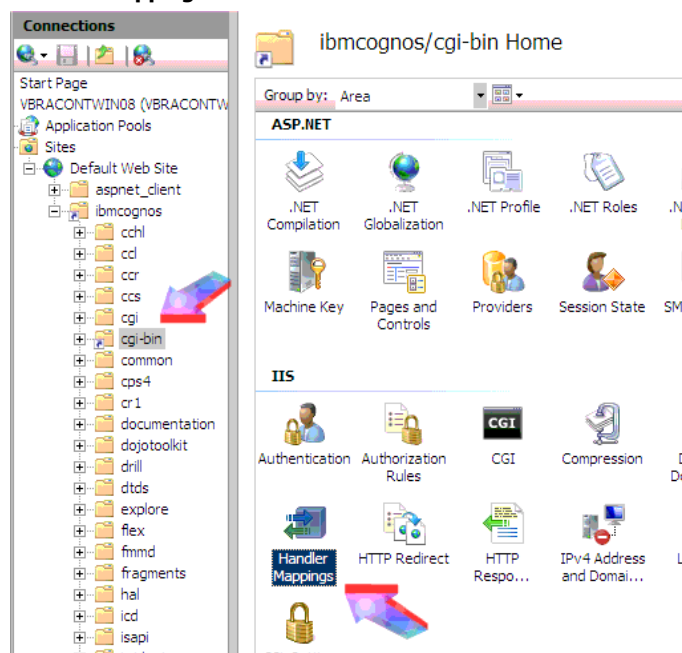


- Add the **cgi-bin** virtual directory
  - **Right click on** the new **ibmcognos** entry
  - Choose **'Add Virtual Directory'**
  - Enter **cgi-bin** in the Alias field
  - In the 'Physical path' browse to (installdir)\cgi-bin path (for example C:\Program Files\ibm\cognos\ccr\_64\cgi-bin) and click the **Next** button

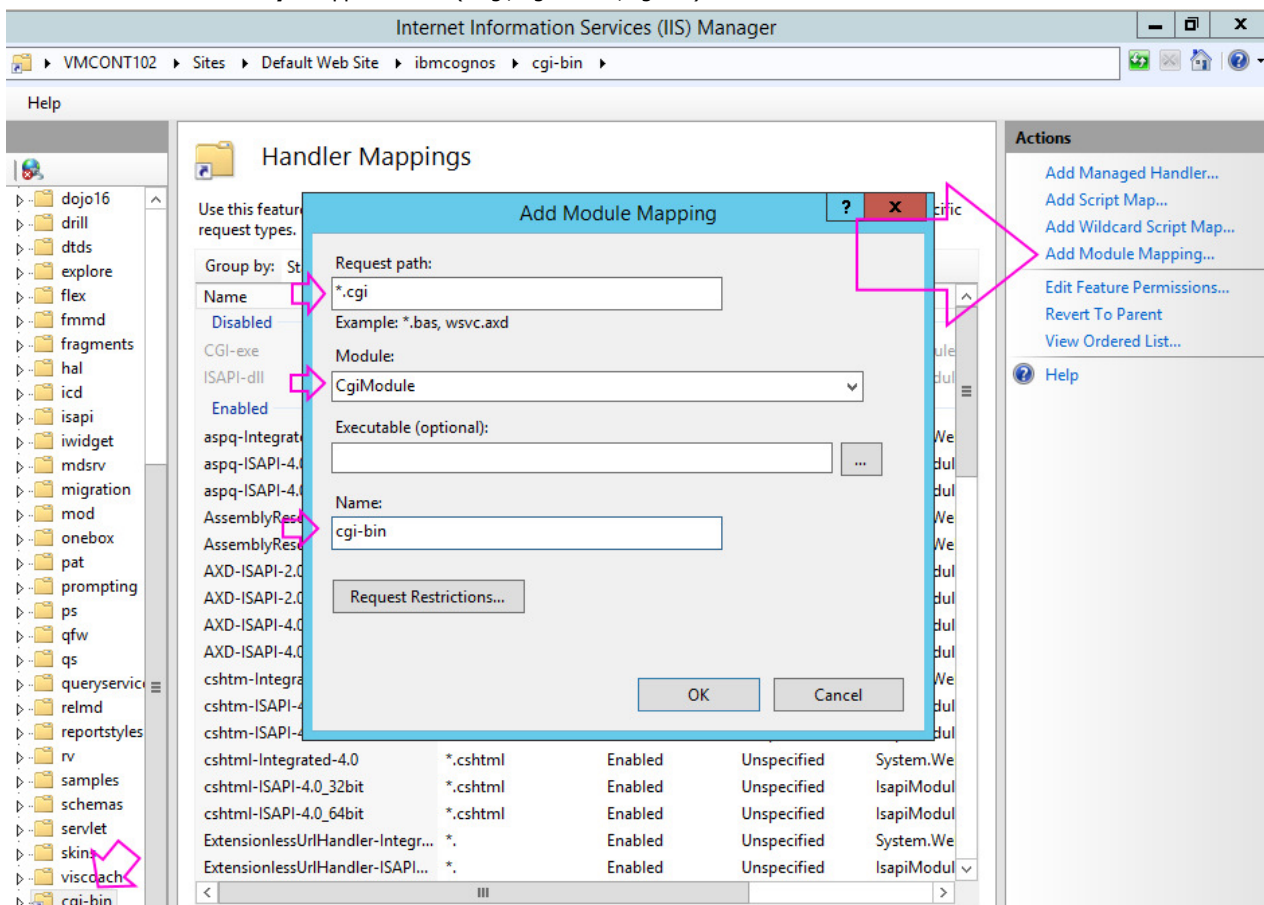


Next, you need to:

- Highlight the **cgi-bin** virtual directory
- Double-click on **'Handler Mappings'**



- Click on 'Add Module Mapping'
- Enter the values **exactly** as appear below (\*.cgi, CgiModule, cgi-bin):



- Click OK.

|         |       |         |             |           |
|---------|-------|---------|-------------|-----------|
| cgi-bin | *.cgi | Enabled | Unspecified | CgiModule |
|---------|-------|---------|-------------|-----------|

By default handlers defined in IIS 7.0 for either CGI or ISAPI modules do not process the full path information in a URI. Therefore (see Technote 1390241) you must perform the following:

- Using Windows Explorer, open the **cgi-bin** folder (default = C:\Program Files\ibm\cognos\ccr\_64\cgi-bin)
- Launch **NOTEPAD.EXE** and edit the file '**web.config**'

TIP: From Windows 2012 onwards, it is not possible to edit files directly unless logged on as the user 'Administrator'. One easy workaround is to launch a Command Prompt 'As Administrator' and (inside there) type: NOTEPAD.EXE.

- Add the text `allowPathInfo="true"` after the entry: `resourceType="xxxxx"`

TIP: The file will now look similar to:

```

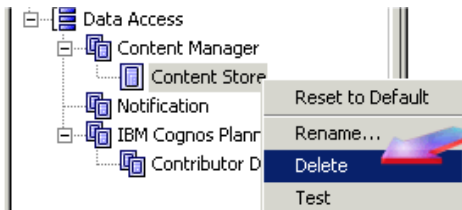
web - Notepad
File Edit Format View Help
<?xml version="1.0" encoding="UTF-8"?>
<configuration>
  <system.webServer>
    <handlers>
      <add name="cgi-bin" path="*.cgi" verb="*" modules="CgiModule" resourceType="File" allowPathInfo="true" />
    </handlers>
  </system.webServer>
</configuration>

```

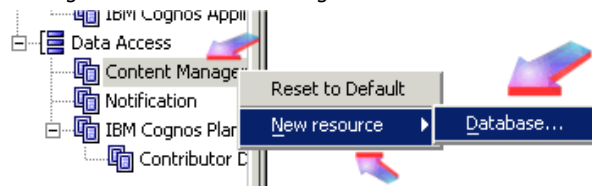
- Launch **Cognos Configuration** (Start Menu > IBM Cognos 10 > Cognos Configuration)
  - Navigate throughout Cognos Configuration, and modify **all** the relevant references which (by default) initially refer to "**localhost**". Change them to the appropriate *rea*/servername
    - e.g. change "local configuration – environment" and "Environment – Portal Services"...
  - In the tree control in the left pane, click on the **Local Configuration > Data Access > Content Manager > Content Store** entry

**TIP:** Previous versions of Controller had the default contentstore type set to Microsoft SQL. From Controller 8.4 onwards, this is now DB2. Therefore, we shall change this to SQL in the next steps

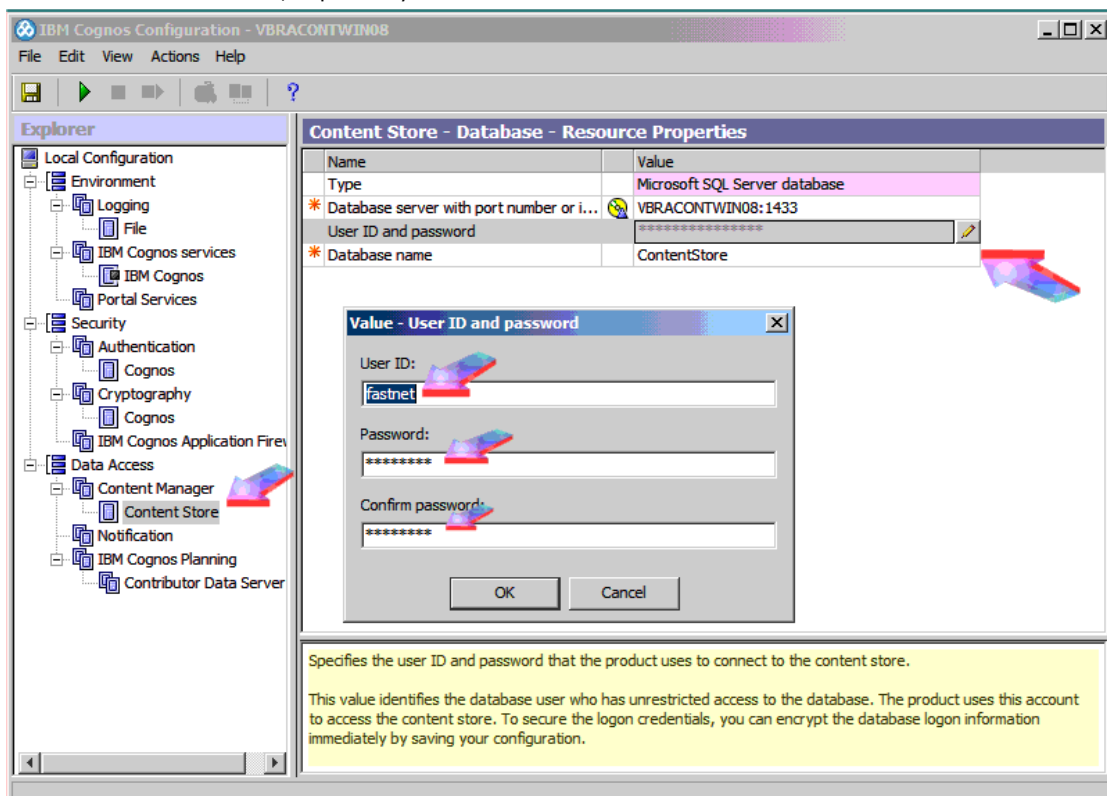
- Right-click on 'Content Store' and choose 'Delete', then click 'yes' to confirm



- Right-click on 'Content Manager' and choose 'New resource' - 'Database'



- Select 'Microsoft SQL Server database'
- Type the name 'Content Store'
- In the right pane, click on the **UserId** and **password**, then on the edit button (it has a **pencil icon**). Enter the user id and password, then click the **ok** button
- Fill in the other entries, to point to your ContentStore database:



- In the left pane, right click on the **Content Store** entry, and select the **Test** option from the popup menu item. Ensure it is successful (this will take a minute or so)
- In the tree control in the left pane, click on the **Local Configuration > Security > Cognos Application Firewall** entry
- In the right pane, set the **Enable CAF Validation** option to **False**

**TIP:** The only reason for disabling the CAF is to give sensible error messages during the initial testing/development phase. When the server goes into production, this should be changed to 'True'.

- In the tree control in the left pane, click on the **Local Configuration**
- Click the **Save** Button, and then the **Start** Service button in the main toolbar (this can take several minutes)

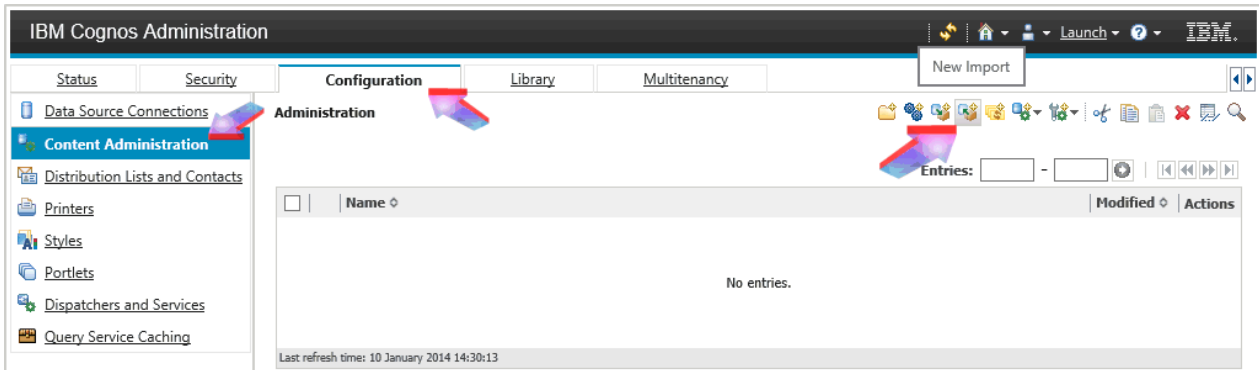
## 7.4 Test the Cognos BI 'runtime' Reporting Server

**TIP:** Test Controller directly from the application server itself first, before trying on remote client PCs.

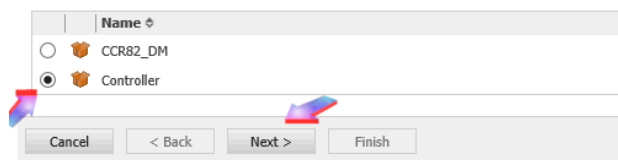
- Launch **Internet Explorer**, and enter **http://(machine name)/ibmcognos** as the address  
*- If Cognos Connection loads, the install was successful!!*

## 7.5 Import the Controller “Standard Reports” Framework Manager model via Cognos Connection

- Launch Cognos Connection from <http://servername/ibmcognos>
- Click **Administer IBM Cognos content**
- Click the **Configuration** tab
- Click **Content Administration**
- Click **New Import** button



- Select the “**Controller**” entry, then click **Next** then **Next**



- **Tick the box** next to the **Controller** entry, and click **Next**

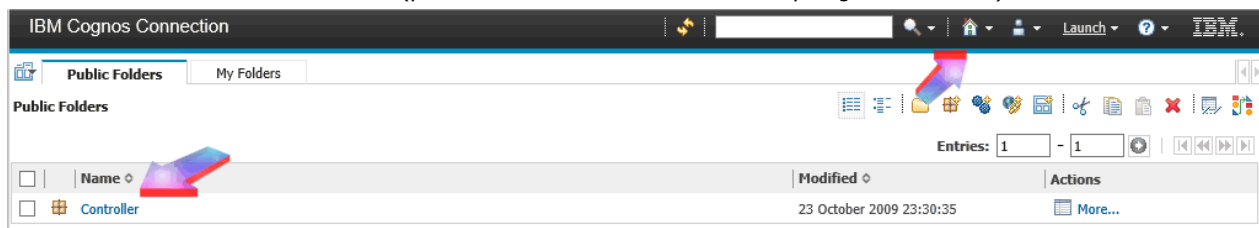
### Public folders, directory and library content

Change the target name of packages and folders if you do not want to overwrite them in the target with packages and folders from the deployment archive. Disable the packages or folders if you do not want users to access them in the target after the import.

Entries: 1 - 1

| <input type="checkbox"/>            | ...> Name  | ...> Target name | <input type="checkbox"/> Disable after import | In target content | Modified |
|-------------------------------------|------------|------------------|-----------------------------------------------|-------------------|----------|
| <input checked="" type="checkbox"/> | Controller | Controller       | <input type="checkbox"/>                      |                   |          |

- Click **Next**, then **Next** then **Finish**
- Click **Run**, then **OK**
- Click then **home** icon (you should see a Controller folder if everything was successful)



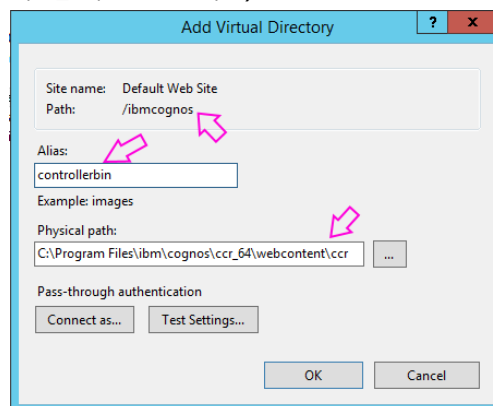
**TIP:** For performance reasons, you should **NOT** have the Report Server service (i.e. the Windows service called “**IBM Cognos**”) running on the same server as your database server (for example Microsoft SQL). However, if you *do* (e.g. this is a very small demo/test server) then you may get an issue after a reboot, where the Cognos BI service does not successfully (automatically) start

- This is caused by the SQL “ContentStore” database not being available when the “IBM Cognos” Windows service tries to start

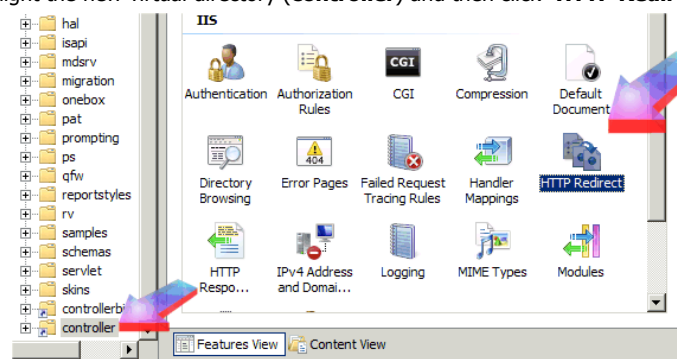
There are many different ways to solve this. See IBM Technote 1347377 for more details.

## 7.6 'Controller Core' IIS configuration

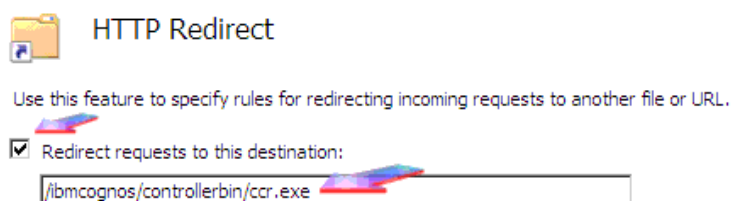
- Ensure the **Controller Application Repository Database** exists
  - See previous section of this document for advice.
- Add the **Controller virtual directories**
  - Add the **controllerbin** virtual directory
    - Launch **IIS Manager**
    - In the tree control in the left pane expand (machine name) > Sites > **Default Web Site**
    - Right click the **ibmcognos** virtual directory and choose '**Add Virtual Directory**'
    - Enter **controllerbin** in the Alias edit field
    - Browse to the <installdir>\webcontent\ccr path (typically C:\Program Files\ibm\cognos\ccr\_64\webcontent\ccr) and click **OK**



- Add the **controller** virtual directory
  - Right click the **ibmcognos** virtual directory and choose '**Add Virtual Directory**'
  - Enter **controller** in the Alias edit field
  - Browse to the <installdir>\ccr\dir path (typically C:\Program Files\ibm\cognos\ccr\_64\ccr\dir) and click **OK**
  - Highlight the new virtual directory (**controller**) and then click "**HTTP Redirect**":



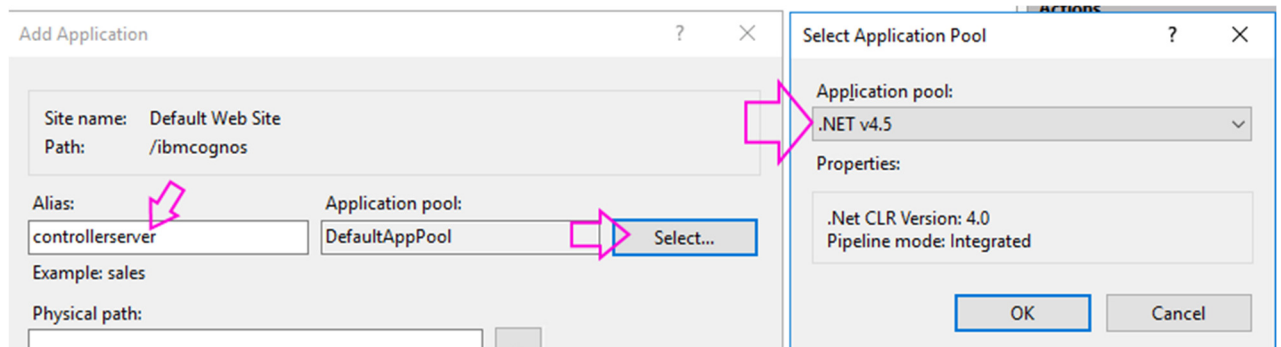
- Tick the "**redirect request to...**" box, and enter **/ibmcognos/controllerbin/ccr.exe**



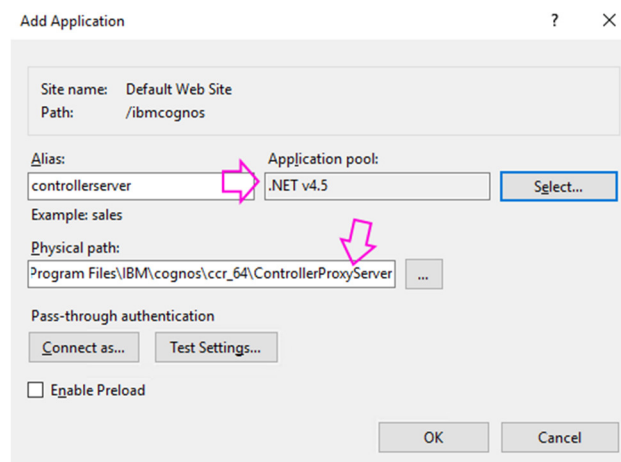
- Click **Apply** button (top right corner)

**TIP:** The section above controls where the client's web browser redirects when they click the 'Controller' link inside Cognos Connection. Therefore, if you have your Client Distribution Server on a **different** server, you should redirect to a different server. For example: <http://CTRLsvrCDS/ibmcognos/controllerbin/ccr.exe>

- Add the **controllerserver** application
  - Right click on the **ibmcognos** entry, select **Add Application** from the popup menu
  - Enter **controllerserver** in the Alias edit field
  - Change the 'Application Pool' to be **".NET v4.5"**:



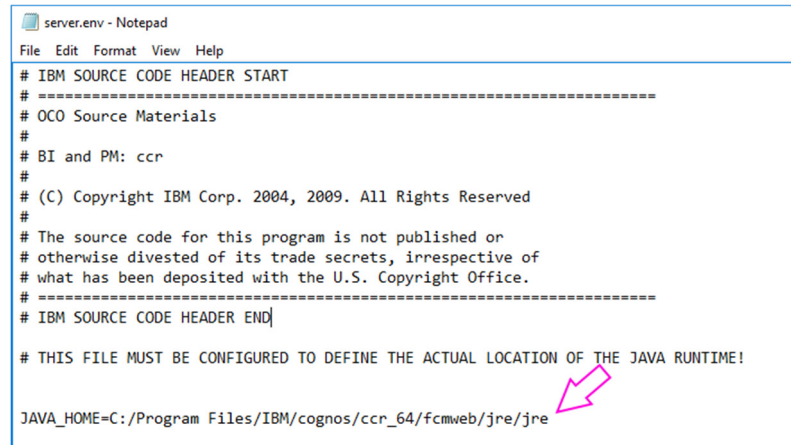
- Browse to the (installdir)\**ControllerProxyServer** path and click **OK**



## 7.7 'Controller Web' IIS configuration

Controller Web is a new feature (from Controller 10.3). At the time of writing, it is only supported to use Controller Web with **Microsoft SQL** databases (not Oracle or DB2).

- Browse to the following folder: C:\Program Files\IBM\cognos\ccr\_64\fcweb\wlp\etc\
- Open the following file inside NOTEPAD: **server.env**
- Modify the setting to point to the relevant JRE folder



```
server.env - Notepad
File Edit Format View Help
# IBM SOURCE CODE HEADER START
# =====
# OCO Source Materials
#
# BI and PM: ccr
#
# (C) Copyright IBM Corp. 2004, 2009. All Rights Reserved
#
# The source code for this program is not published or
# otherwise divested of its trade secrets, irrespective of
# what has been deposited with the U.S. Copyright Office.
# =====
# IBM SOURCE CODE HEADER END

# THIS FILE MUST BE CONFIGURED TO DEFINE THE ACTUAL LOCATION OF THE JAVA RUNTIME!

JAVA_HOME=C:/Program Files/IBM/cognos/ccr_64/fcweb/jre/jre
```

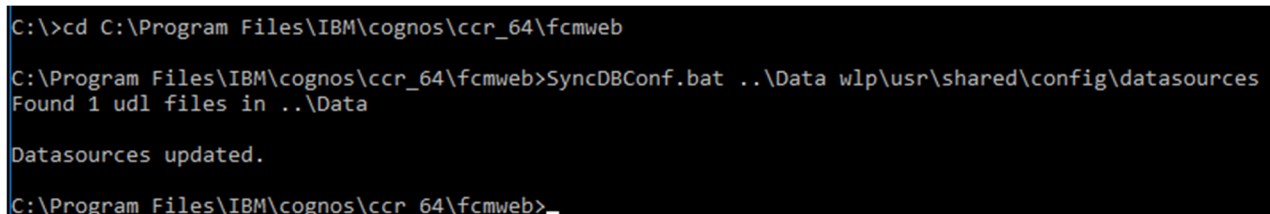
TIP: By default, this means alter the relevant line to look like:

**JAVA\_HOME=C:/Program Files/IBM/cognos/ccr\_64/fcweb/jre/jre**

Synchronize Controller Web with the current/existing 'database connection' UDL files by performing the following:

- Right-click on the 'Start' menu, and choose '**Command Prompt (Admin)**'
- Type a command similar to: **cd C:\Program Files\IBM\cognos\ccr\_64\fcweb**
- Type the following command : **SyncDBConf.bat ..\Data wlp\usr\shared\config\datasources**

You should get a success message similar to:



```
C:\>cd C:\Program Files\IBM\cognos\ccr_64\fcweb
C:\Program Files\IBM\cognos\ccr_64\fcweb>SyncDBConf.bat ..\Data wlp\usr\shared\config\datasources
Found 1 udl files in ..\Data
Datasources updated.
C:\Program Files\IBM\cognos\ccr_64\fcweb>
```

- Browse to this folder: **C:\Program Files\IBM\cognos\ccr\_64\fcweb\wlp\usr\servers\fcweb**
- Open the following file inside NOTEPAD: **com.ibm.cognos.fcweb.properties**
- in the C:\Program Files\IBM\cognos\ccr\_64\fcweb\wlp\usr\servers\fcweb folder.
- Modify the relevant line, to read: **loginMode=NATIVE**

```
### CLASSIC and BI SERVER ###

# @TOKEN@ elements below must be transformed during deployment to match actual installation.
# Login mode can be set to NATIVE or CAM.

ccrwsUrl=@CCRWS_PATH@/ccrws.asmx
biUrl=@BI_PATH@
biDispatchEndpoint=@BI_DISPATCH_PATH@
loginMode=NATIVE
```

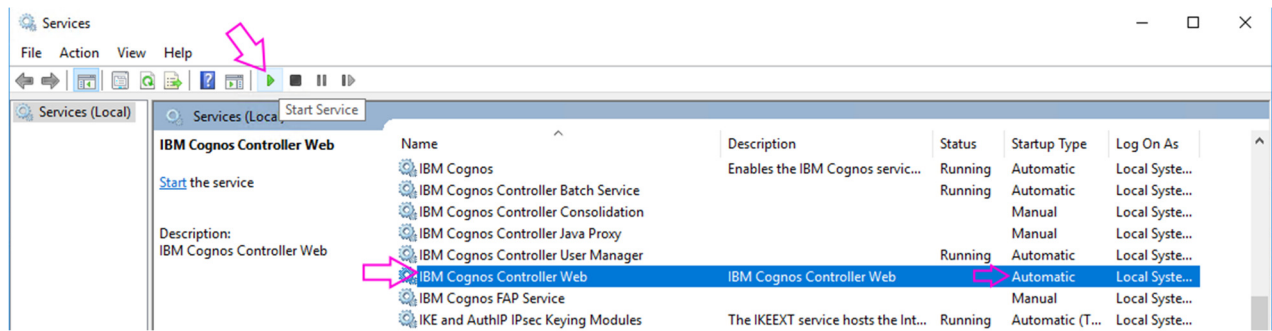
**Optionally** you can change the available memory:

- Locate the file **jvm.options** in the folder: C:\Program Files\IBM\cognos\ccr\_64\fcweb\wlp\etc\
- Change the settings (as required) for: **Xms/Xmx**

Create a Microsoft Windows service by:

- Browse to here: **C:\Program Files\IBM\cognos\ccr\_64\fcweb**
- double-click on the file: **install\_service.bat**

Open the Windows services console and start the service '**IBM Cognos Controller Web**':

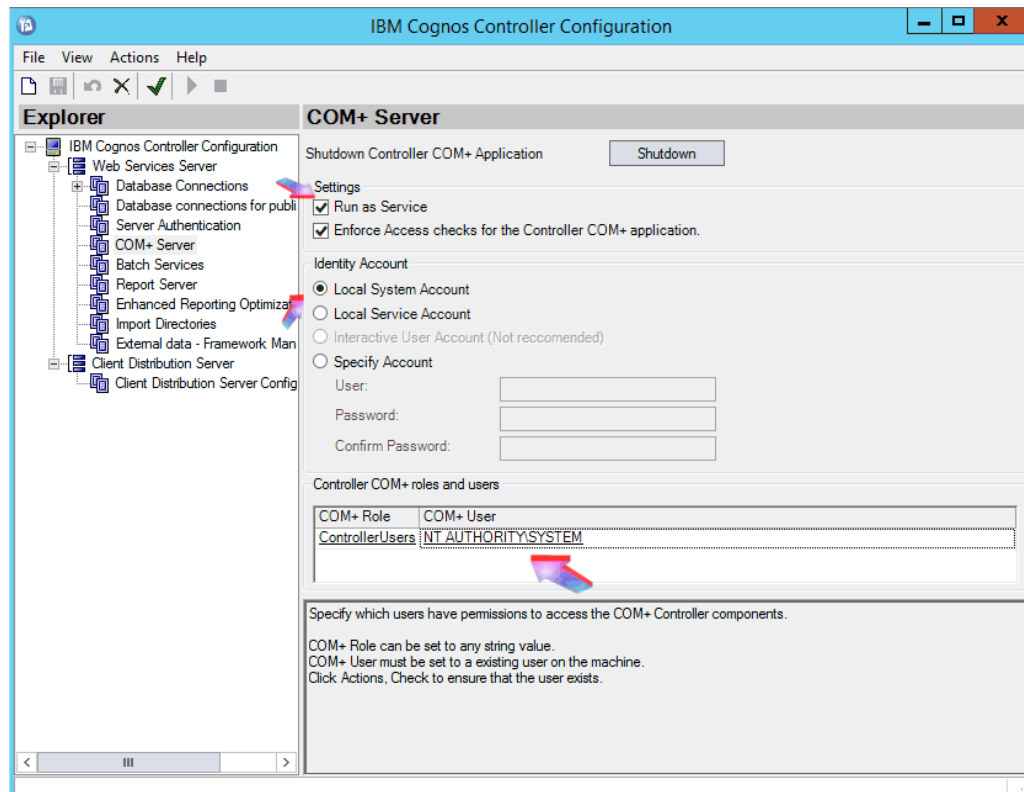


Finally, test Controller Web via your browser using the following url: [http://\[servername\]:9080/fcm.web/login](http://[servername]:9080/fcm.web/login)

## 7.8 Controller Configuration utility

Launch **Controller Configuration** (Start Menu > IBM Cognos Controller - 64 > Controller Configuration)

- Configure **COM+ Server**
  - In the tree control in the left pane, expand **Cognos Controller Configuration > Web Services Server > COM+ Server**
  - In the right pane, make sure that "Run as a Service" is ticked
  - Make sure that "Enforce Access checks for the Controller COM+ application" is ticked
  - In "Identity Account" choose "Local System Account":



In the **Controller COM+ roles and users**, if there are no entries (see above for what it should correctly look like) then add the relevant entries manually by doing the following:

- Click in the 'white' area, and then click the **New** button ('white page' icon) from the main tool bar
- In the COM+ Role, enter a suitable name, such as "ControllerUsers"
- In the COM+ User, enter **NT AUTHORITY\SYSTEM** as the user (see above picture)
- Click on **"SAVE"** icon (top left corner)

- Configure the **database connection**
  - In the tree control in the left pane, expand IBM Cognos Controller Configuration > Web Services Server > **Database Connections**
  - Click the **New** button in the main tool bar
  - In the right pane, enter the following information:
    - Datasertype: **SQL Server** (TIP: you can simply double-click on this cell to change it)
      - **Name:** default (for example)

TIP: usually the name of the server and/or purpose is used to help identify the database e.g. "default" and "controllertest")

**IMPORTANT:** The 'database connection' names are **case-sensitive**. Therefore, for 'SelectDB' and 'single-user mode' to work correctly, your main (live) database should **never** be called 'Default'. Instead, it should be 'default' with **all characters lowercase**!

- For more information, see IBM Technote 1364826 .

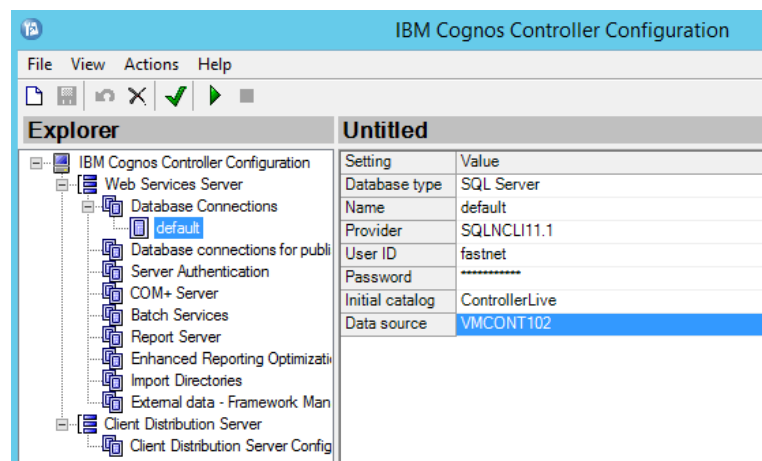
• **Provider:**

This depends on what database **client** you have installed on your Controller application server:

| Database client | Provider          |
|-----------------|-------------------|
| SQL 2008        | SQLNCLI10.1       |
| SQL 2012        | SQLNCLI11.1       |
| SQL 2014        | SQLNCLI11.1       |
| SQL 2016        | SQLNCLI11.1       |
| Oracle          | OraOLEDB.Oracle.1 |
| DB2             | IBMDADB2.DB2COPY1 |

NOTE:

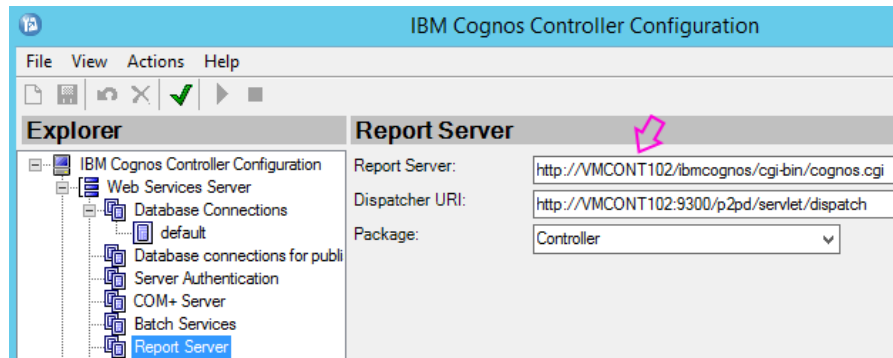
- **User ID:** The user ID used in the Create Controller Database step (e.g. **fastnet**)
- **Password:** The Password used in the Create Controller Database step
- **Initial catalog:** The name of the database created previously step (e.g. **ControllerLive**)
- **Data source:** The name of the database server



- Click the **save** button in the main tool bar

**Configure the location of the Cognos Report server** (i.e. typically the same as the Controller application server, unless you have a “distributed” installation where you have a separate BI/Report server)

- In the tree control in the left pane, expand Cognos Controller Configuration > Web Services Server > **Report Server**
- In the right pane, in the report server field, change the “Report Server” section
  - **from** <http://localhost/ibmcognos/...>
  - **to** <http://<servername>/ibmcognos/...>

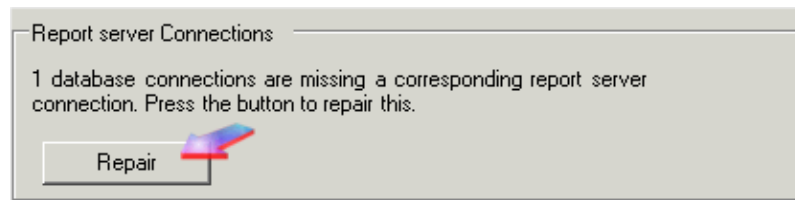


**IMPORTANT:** In some situations, the 'Report Server' section may **APPEAR** to have already have been filled in with the correct servername (not localhost) already appearing. If this is true, then you **\*must\*** make a subtle change, re-save and then reverse the change, and re-save.

**=> If you do not this, then these settings will not get saved and registered properly!**

- Click on the “**save**” icon at the top-left corner of “Controller Configuration”
- Ensure that the **dispatcher URI** is set to <http://<servername>/ibmcognos/...>
- Ensure that **Controller** is the package name, and click **Save**

At this stage, you *should* see the following message, and you should click **Repair**.



If you do not see that message, then click the green 'tick' button (to force it to appear).

**TIP:** This step ensures that the system reports can work (handled by the Cognos BI runtime component).

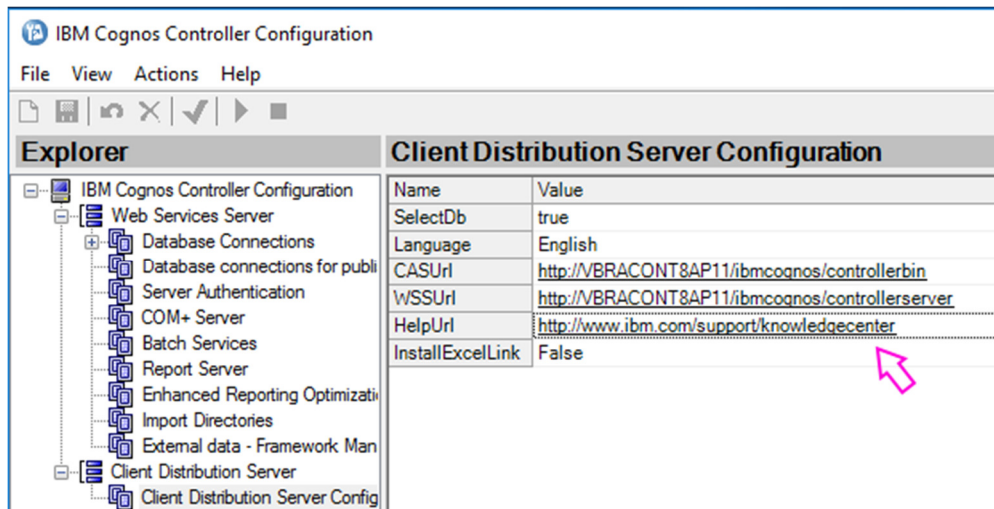
Clicking on the Repair button creates a connection (“data source”) between Controller and Cognos BI reporting services. This step (pressing the repair button) has to be done again whenever you create a new database connection in the future.

**"Client Distribution Server Config"**

This section only affects users who launch the 'web client' (<http://server/ibmcognos/controllerbin/ccr.exe>). This is rarely used by customers nowadays (instead, most customers now install/use the 'local' client CCRLocalClient64.MSI), **so for many customers this section is irrelevant.**

If you **do** intend to use the 'web client' then ensure that:

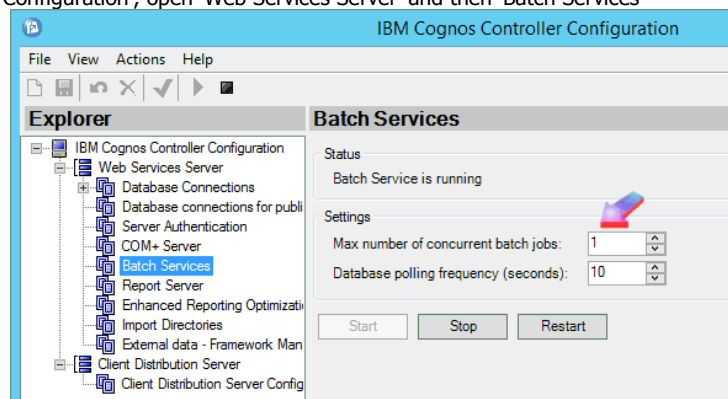
- **SelectDB** is set as appropriate
  - In general, most customers set this to **"true"** (so users can see all database by default).
- Ensure that all end user's PCs can resolve the URLs that are specified
  - Typically this means changing the NetBIOS names (e.g. MYSERVER) into FQDN names (e.g. MYSERVER.companyname.com)



- The settings (CASUrl, WSSUrl and HelpUrl) defined here are the ones that the client PCs will attempt to use, so it is **VITAL** that they are correct
  - NOTE: The value for 'HelpUrl' has changed (compared to Controller 10.2.1 and earlier)
- After making changes, you must click the **'save'** icon

## 7.9 Enable Batch service(s)

Inside 'IBM Cognos Controller Configuration', open 'Web Services Server' and then 'Batch Services'



**IMPORTANT:** Unless the customer has exceptional needs/requirements, you should **only** have a maximum of **1 concurrent batch jobs running** (no more) – See Technote 1370901 for full details.

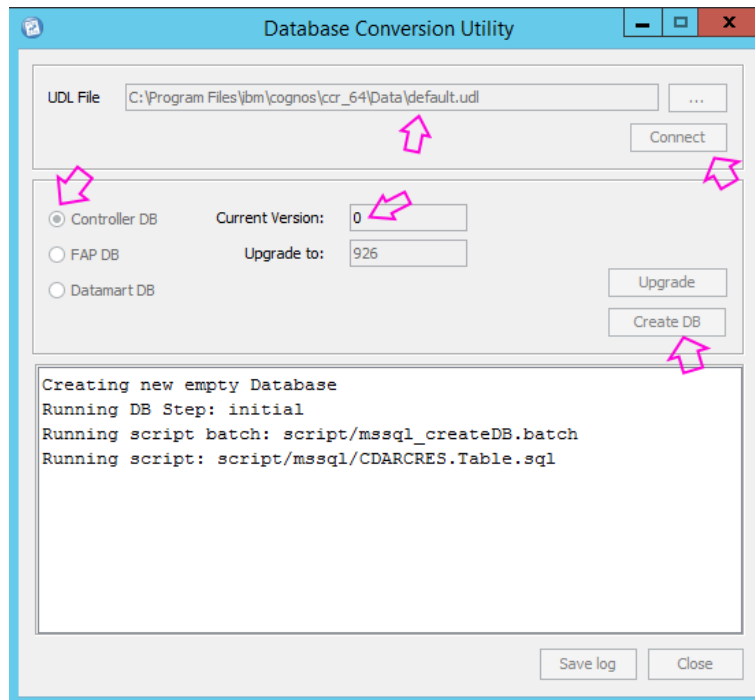
## 7.10 Enable Optimise2

**IMPORTANT:** Optimise2 (also known as "ERO") is **HUGELY** useful for speeding up Controller Excel-based reports. It is **VITAL** that this is configured, to allow the end users to speed up their system.

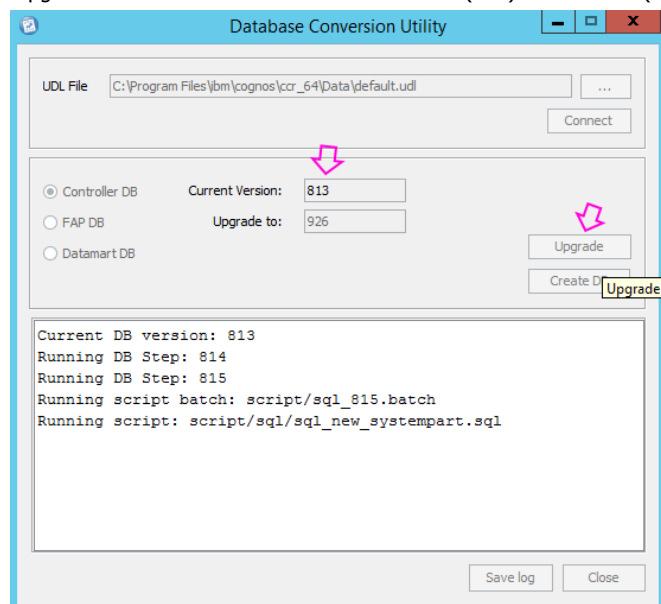
See IBM Technote #1347048 for full details of how to configure ERO/Optimise2.

### 7.11 Use "Database Conversion Utility" to populate databases

- Open the section "Database Connections" and highlight the new database (for example called "default")
- Click the **Run** (green "play") button in the main tool bar
- Ensure that the "UDL File" is pointing to the relevant database connection (for example: *C:\Program Files\ibm\cognos\ccr\_64\Data\default.udl*)
- Ensure that "**Controller DB**" is selected
- Click "**Connect**"
- Because this database is a brand new 'blank' database, the "Current Version" will be set **to zero (0)**.
  - Therefore, click "**Create DB**":



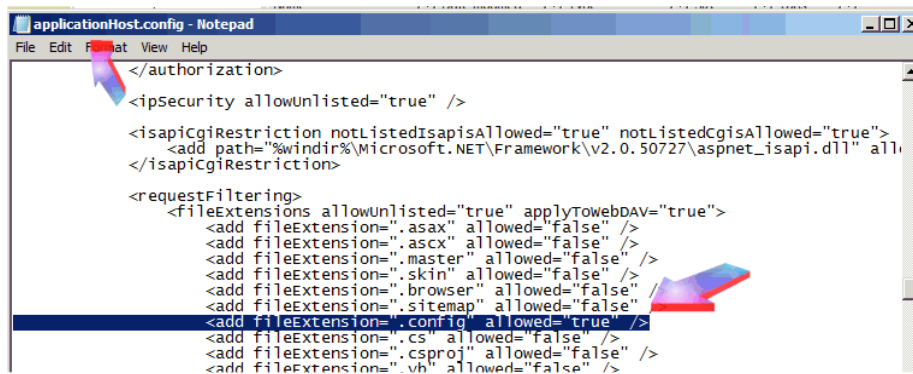
- When the script has finished running, it will say "Done", and the version displayed will be 813:
- Now click on "**Upgrade**" to upgrade the database from the current version (813) to the latest (927):



- When finished, there will be a message saying "**DB succesfully upgraded to version: 9xx**"
- Click **Close**.

**Finally, you need to:**

- Open the folder C:\Windows\System32\inetsrv\config
- Launch **Notepad.exe** and edit the file **applicationHost.config**
- Search for '**requestFiltering**' section
- Modify the value for '**.config**' to 'true':

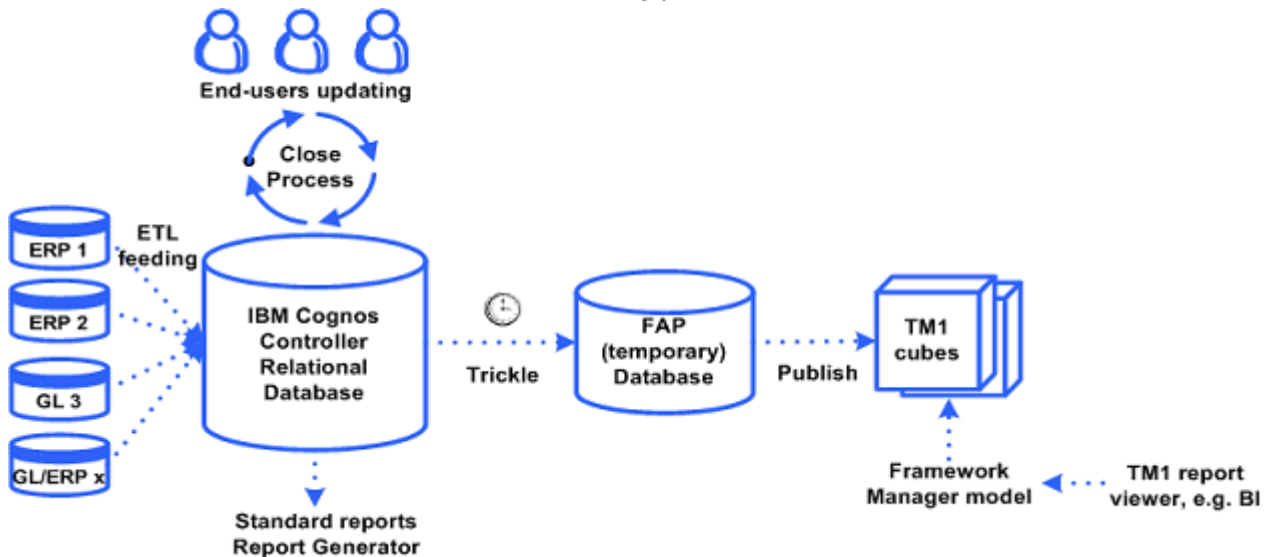


In other words, modify the line to read: **<add fileExtension=".config" allowed="true" />**

## 8 Install and Configure Financial Analytics Publish (FAP)

Controller's FAP functionality allows the customer to publish Controller financial data into a TM1 cube, for reporting purposes.

Its architecture is best summarised inside the following picture:



The potential benefits of using FAP are so huge, that [it is strongly recommended that all customers install and configure FAP](#), as part of their Controller system.

- For details on how to accomplish this, see separate document "Installing & Configuring IBM Cognos Controller 10.2 FAP with TM1 10.2.2" which is available from here: <http://www-01.ibm.com/support/docview.wss?uid=swg21608353>

## 9 Post-install Optimisations

### 9.1 Proactive Server Reboots

In the author's experience, recent versions of IBM and third-party (MS SQL/Oracle) software have been sufficiently stable (especially with regards to memory leaks) as to make regular/proactive server reboots unnecessary

⇒ At this time, the author does not recommend scheduling regular/proactive server reboots.

### 9.2 Split the COM+ application

Previous versions of Controller benefitted from COM+ splitting. However, Controller 10.2's architecture has moved almost all COM objects into native .NET.

⇒ There is no need to split COM+.

### 9.3 Optional: Enable Email Functionality

End-users can use the email functionality inside Controller for sending things like reports, intercompany balances and export files via e-mail. If you know the email server settings, then you can perform the following:

- Launch Controller
- **Maintain – Configuration – General**
- Click on "General 3" tab
- Fill in the details (e.g. see example below)

E-Mail Settings

☒ Use E-mail    SMTP Server:     E-Mail Format:

#### NOTE:

- You will **not** be able to *save* the above changes on a blank database until you first configure some other settings!
  - e.g. click on "Reconcile" and set both the "balance sheet" and "P&L" to an appropriate value (e.g. "1001 – sales")
- Inside the official Controller help file, it may have references to "Outlook". This seems to be a mistake in the help file. Controller is not able to send emails via MAPI. Instead, it only sends via SMTP
- make sure that you have an email address defined for the user (that you have logged in as) in Maintain/Rights/Users:

Cognos Controller - [Users]

File Edit View Company Group Reports Transfer Maintain Window Help

User Groups

- Main User Group
  - Administrator
  - Christer A
- Divisional Users
  - Commercial
  - Consumer
  - Internet
  - Iena Lambert
  - Wholesale

Create New:

Settings Limitations

User

User Id:

Current Password:

Name:

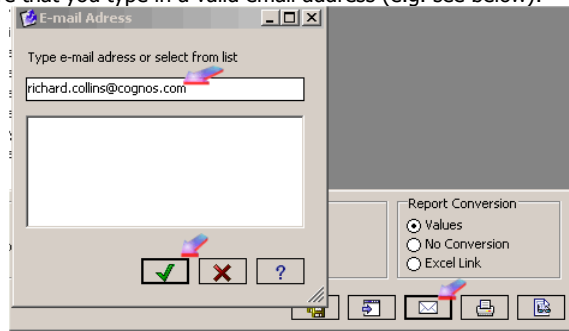
E-Mail Address:

User Group:

- you also require a properly configured SMTP server, which "trusts" SMTP messages sent from the users/computer(s)

**TESTING:** The easiest way to test whether the above works is to go into:

- Transfer – Export Structures
- Inside the box, ensure that you type in a valid email address (e.g. see below):



#### 9.4 Optional: Change Controller 'Standard Reports' to use ISAPI not CGI technology

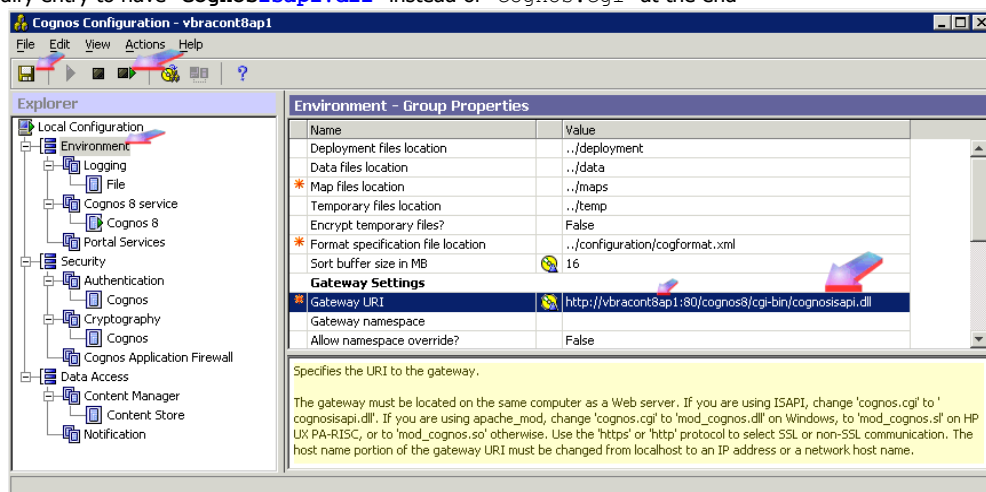
**IMPORTANT:** Before making any changes, please test that 'standard reports' work OK for CGI. This will ensure that you do not waste extra time troubleshooting if Standard Reports fail to work on ISAPI afterwards.

**TIP:** ISAPI is a Microsoft technology, optimised for Microsoft websites (IIS). By default, Cognos products use CGI technology which is compatible with IIS and Apache etc., but not optimised for Microsoft.

For most scenarios, changing from using CGI to ISAPI will provide no noticeable benefit. HOWEVER, there *\*are\** occasions where it is useful to make this change.

- **Scenario 1** – If deploying Controller via RDP (Microsoft Terminal Services), then sometimes using CGI will cause 'standard reports' and 'single-signon' to fail. NOTE: The problem does *\*not\** affect deploying Controller via ICA (Citrix) protocols – it *\*only\** affects RDP (Microsoft) Terminal Services protocols. *For more information, see the *\*internal\** KB article 1026113, or external Microsoft article <http://support.microsoft.com/default.aspx?scid=kb;en-us;829011>.*
- **Scenario 2** – If deploying Controller via using a 'gateway' (e.g. DMZ) configuration (i.e. using the 't=controller' parameter), then using ISAPI can dramatically reduce the CPU overhead on the gateway webserver. *For more information on the t= parameter, see IBM Technote #1347535 or the (internal only) KB article 1034531.*

- Launch **Cognos Configuration**
- Locate "Environment" – and then search for "Gateway URI"
- Modify entry to have "**cognosisapi.dll**" instead of "**cognos.cgi**" at the end



- Click "save"
- Restart the Cognos BI service (by clicking on "restart" icon at top)

Then:

### 1) Ensure "Allow unspecified ISAPI modules is selected"

- Right-click on 'My Computer' and choose 'Manage'. Expand 'Server Manager - Roles - Web Server (IIS)'
- Click 'Internet Information Services'. Inside the 'Connections' section, highlight your server (i.e. click on its SERVERNAME)
- Double-click on 'ISAPI and CGI restrictions' (in the right-hand pane)
- Under Actions on the right hand screen select "Edit Feature Settings" and make sure "Allow unspecified ISAPI modules" is selected.

### 2) Configure "Module Mapping"

- In the left-hand "Connection" pane, highlight/select the virtual directory "cgi-bin"
- Double-click on 'Handler Mappings' (in the right-hand pane). Click on 'Add Module Mapping'
- Enter the values similar to the following (modify the path as appropriate for your version of Controller and where you have installed it):
  - Request path: **cognosisapi.dll**
  - Module: **IsapiModule**
  - Executable (optional): **C:\Program Files\ibm\cognos\ccr\_64\cognosisapi.dll**
  - Name: **ISAPI-cognos**
- Click OK then (if asked) "Yes".

### 3) Modify 'allowPathInfo' setting

- Using Windows Explorer, open the cgi-bin folder (default = C:\Program Files\ibm\cognos\ccr\_64\cgi-bin)
- Launch NOTEPAD.EXE and edit the file 'web.config'.
- Add the text allowPathInfo="true" near the end of the line. For example, it would change to:  

```
<add name="ISAPI-cognos" path="cognosisapi.dll" verb="*" modules="IsapiModule" scriptProcessor="C:\Program Files\ibm\cognos\ccr_64\cgi-bin\cognosisapi.dll" resourceType="Unspecified" allowPathInfo="true" />
```

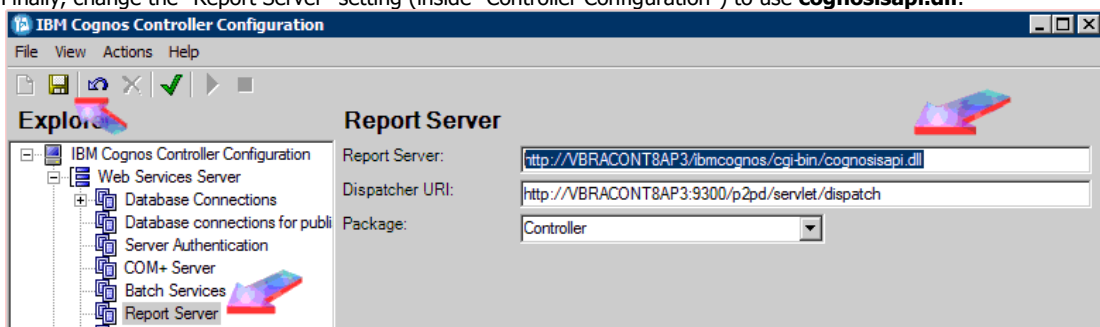
### 4) Restart IIS

- Click "START - RUN"
- Type: CMD <Enter>
- Type: IISRESET <Enter>

### 5) Modify "default.htm" and "index.html" inside the /webcontent directory

- Launch the following (modify the file location as appropriate): Notepad.exe C:\Program Files\ibm\cognos\ccr\_64\webcontent\default.htm
- Modify the entry from "cognos.cgi" to "cognosisapi.dll" instead:
- Repeat the above for the file C:\Program Files\ibm\cognos\ccr\_64\webcontent\index.html

Finally, change the "Report Server" setting (inside "Controller Configuration") to use **cognosisapi.dll**:



## 10 Testing on Application Server

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### 10.1 Install Client Software on the Application Server

Essentially, you simply install **CCRLocalClient64.MSI** (located inside folder ... \webcontent\ccr).

When asked for **WSSUrl** & **HelpUrl**, typically enter values similar to:

WSS Url: <http://<servername>/ibmcognos/controller/server>

Help Url: <http://www.ibm.com/support/knowledgecenter>

For full details, see here: <http://www.ibm.com/support/docview.wss?uid=swg21965917>

### 10.2 Launch Controller client and perform basic testing (on application server itself)

The amount of testing that is possible depends on whether you have only “blank” Controller databases, or a fully-populated database.

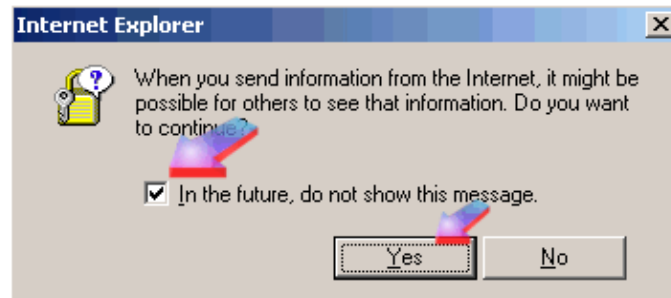
Assuming that you have installed the ‘local’ client on the Controller application server (see earlier section) then launch Controller from the Start Menu icon:

- **Login Test**
  - In the database selection page, choose the new database you’ve created in the previous step
  - Enter **ADM** as the user and **kbs** as the password
  - If the main application window appears, login is successful
    - You may be asked to Optimise the database. If so, go into “Single User Mode” and do this
- **Documentation Test**
  - From the **Help** main menu, select **Contents**
    - If the HTML user guide is displayed, **the help files are ok**
- **System Information Test**
  - From the **Help** main menu, select **System Information**
  - If the information is correct, **system information is successful**
- **Forms and Data Loading/Saving Test**
  - From the **Maintain** menu item, select **Account Structure > Define...**
    - Click the **New** button
    - Enter **1001** as the **Code** - edit Field
    - Enter **Sales** as the **Name - Group** edit field
    - Enter **Sales** as the **Short Name - Group** edit field
    - Click the **...** button for **Account Type**, and select **Income** as the type
    - Click **Save** then **close**
  - From the **Maintain** menu item, select **Account Structure > Define...**
  - If the Sales account is available, **the data loading and saving is successful**
- **Standard ‘System’ Reports Test #1a (“Regular reports”)**
  - From the **Maintain** menu item, select **Account Structure > Reports...**
  - Select **Codes** from the Report Selections group
  - Select **Texts** from the Additional Reports group
  - Click the **...** button for the **Account** edit field in the **Account/From Selection** group
  - Click the **Sales** account, then click **OK** button (the green check mark)
  - Click the **preview** button
    - If the Report appears in PDF format, **the report execution is successful**

NB: You may find that the report server fails at this point. Try repeating the same thing (the report server may not have started yet). Also, you may have to launch Adobe Acrobat reader and “accept” the license agreement first.

- **Standard 'System' Reports Test #1b**
  - **Maintain , Account Structure > Verify...**
  - tick '**check account structure**' and click **Preview**

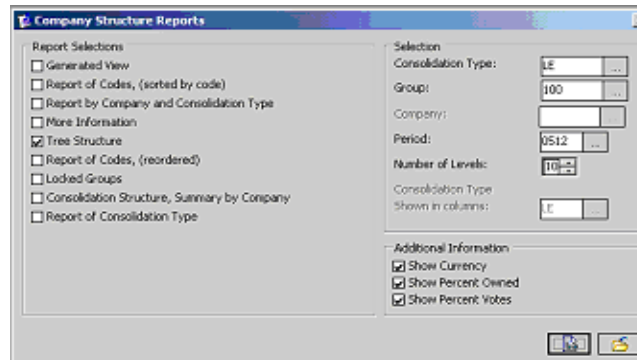
**IMPORTANT:** You may now see a screen similar to the following:



**You MUST leave the "tick" box as it is (i.e. 'ticked'/'checked'), and click "yes".** This is because the information between the client and the application server is all sent via HTTP (usually via Internet Explorer settings) and therefore if you clicked "no" it will forever block traffic in the future!!!

ALSO: If you see a message "Page cannot be displayed" during the above testing, then this is normally because you have forgotten to change the server name from "localhost" to <servername> - see earlier section entitled "Configure the location of the Cognos Report server"

- **Standard 'System' Reports Test #1c**
  - **Maintain – company structure - reports**
  - tick '**tree structure**' and click **Preview**



- **Standard Reports Test #2 (Result Sets Processed by VFPCOM)**
  - From the **Group** menu item, select **Reconcile > Intercompany Balances...**
  - In the **Report Number** edit field, enter **2**
  - Click the **Detailed** check box for the *Report Content* item
  - In the **Group** edit field, enter **1000**
  - Click the **preview** button
  - If the Report appears in PDF format, **the report execution is successful**
- **Test Excel Link**
  - From the **Reports** menu item, select **Run...**
  - On the **Reports and Forms** tab, select **Report**
  - Select both **Show Rows** and **Show Columns** inside the "show zero values"
  - Click on the **preview** button
    - If a print preview in Excel appears correct, **the test of the Excel Link is successful**

## 10.3 Troubleshooting

One of the most useful tests that you can perform is to test whether your Controller application server ("ControllerProxy Server", a.k.a. "WS server") is responding:

- In a web browser, type: `http://<servername>/ibmcognos/ControllerServer/CCRWS.asmx`
- It should respond with a screen with a list of lots of services that are available.

## 10.4 General Windows (non-Cognos specific) Performance testing

If time permits, it would be ideal if you could check that the application/SQL servers demonstrate good I/O network performance (etc.) by performing tests such as the following:

**TIP:** The author has personally seen many high-performance server environments ruined by using the wrong network card speed (e.g. 'auto-detect' instead of 100Mb Full Duplex or Gigabit).

### File copy test

- Copy a file from a **remote (WAN) client PC** to the front (application) 'gateway' server
  - make sure you have a *minimum* throughput of 256-500kb per sec
    - 1mb is better
    - 10mb is optimal
- Copy a file from each **server** to each *other* server
  - Copy a large file (e.g. 100mb+) from the main application server to database (e.g. SQL) server, **and vice versa**
    - make sure you have a minimum throughput of 10mb
      - (20 when using nic teaming, and 30 with a gigabyte nic)
    - Make sure to test both ways from each physical server, as switch ports can be mis-configured for inbound and outbound per port.
- Check **network cards** - make sure the server NIC is set correctly (e.g. 100mb FD minimum if supported by switch)
  - Controller will benefit if the NIC is set on gigabit (if supported by switch)
- Check "**File and printer sharing**" is set on "Maximise throughput for network applications".

To test if **SQL server** is overloaded, use `perfmon` (administrative tools) on the SQL server to check the following average performance counters:

- Memory: Available Bytes                      not under 5mb; between 5 and 10mb free is normal (add physical memory)
- Memory: Pages/sec                            not over 20 (ad physical memory)
- Physical Disk: % Disk time                   not over 55% longer then 10 min. (add or change disk setup)
- Physical Disk: Avg. Disk Queue Length    not over 2 longer then 10 min. (add or change disk setup)
- Processor: % Processor Time                not over 80% longer then 10 min. (add or upgrade cpu's - preferably with large level2 cache like 2mb)
- System: Processor Queue Length           not over 2 PER PROCESSOR. (add or upgrade cpu's)
- SQL Server Buffer manager: Buffer Cache Hit Ratio\*    not under 90%; the closer to 99 the better. (add physical memory)

\* This performance counter is selectable during SQL server installation.

## 11 Install Client Software on User's PC

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Logon to the end user's PC using an Administrative account, and follow the instructions that are here:  
<http://www.ibm.com/support/docview.wss?uid=swg21965917>

## 12 Basic Testing for each Client PC installation

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Ideally, you could launch Controller as the Administrative user (the one that you installed the software with) first. After the testing, logoff and logon as the "normal" end-user and test as him/herself.

Assuming that Controller worked OK on the application server, it is almost certain that each client PC will be OK, so long as the software is installed as per my best practice document. Therefore, the following 2 simple tests should be enough:

### 12.1 Main Controller program

Launch Controller from URL and login. Click on "Help" – "About Controller" and then "Help" – "System Info" and ensure that the Controller version matches what you expect.

### 12.2 Excel link

Launch Excel. Click on "Help" – "About Controller link" and ensure that the Controller link version matches what you expect.

## 13 Appendices – Further Reading

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### 13.1 Potential Additions/Enhancements/Optimisations

The following are things that you could potentially do to your Controller system, together with some suggestions for further reading (other documentation) that will help you understand how to accomplish it.

**IMPORTANT:** Before making any changes, please test that all Controller functionality works BEFORE \*and\* after. By doing this, it will reduce (in the long term) the time taken to troubleshoot any future problems.

- Enable [IIS Compression](#)
  - Useful if deploying Controller client over a WAN (e.g. deploying Controller over the internet, without using Citrix)
  - *See IBM Technote 1347307 for more details.*
- Change Security from “Native” to “Cognos CAM” and [utilise Active Directory or Access Manager namespace, and/or Single Sign On \(SSO\)](#)
  - *See IBM Technotes 1380097, 1380098 & 1380099 for more details.*
- Deploying [ControllerExcelLinkSetup\\_x64](#) instead of other client files.
  - Typically, the author recommends that you should use CCRLocalClient64.MSI
  - However, see IBM Technote 1371088 for details on what the other client types are designed for.
- [Split Directory Install](#)
  - *Full details to come in future version of this document, but some information is located inside Technote 1414473.*
- [Distributed Installations](#)
  - *Some useful information is located inside Technote 1367311.*
- [Enabling](#) use of [SSL](#) on a Controller Gateway
  - See IBM Technote 1345570.
- [Configure for Data Mart publishing](#)
  - See IBM Technote 1347788.